#1

LANCE R. LEFLEUR
DIRECTOR

ADEM

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ▪ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

JANUARY 17, 2019

MR BILL PEARSON
FIELD SUPERVISOR
US FISH & WILDLIFE SERVICE
ALABAMA ECOLOGICAL SERVICES FIELD OFFICE
1208 MAIN STREET
DAPHNE ALABAMA 36526

RE: **Cooling Water Intake Structure 316(b) Review**
3M Company – NPDES Permit Application
Permit Number AL0000205
Morgan County

Dear Mr. Pearson:

Enclosed is a copy of the permit application submitted to the Alabama Department of Environmental Management for the reissuance of NPDES Permit AL0000205 for 3M Company.

This application is being transmitted to your office for a 60 day review period so that the Fish and Wildlife Service has the opportunity to review the information related to the design and operation of the cooling water intake structure at this site as required by 40 CFR 125.98(h).

In addition, the Department will provide the public notice, along with a copy of the fact sheet, statement of basis, the permit application, and the draft permit to your office to provide you with the opportunity to comment as required by 40 CFR 124.10.

Please submit your comments and/or questions to Scott Ramsey via email at sramsey@adem.alabama.gov or by phone at (334) 271-7838, or in writing to the above noted address.

Sincerely,

Scott Ramsey, Chief
Industrial Section
Industrial/Municipal Branch
Water Division

Enclosure: Application

pc:

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM)
NPDES INDIVIDUAL PERMIT APPLICATION
SUPPLEMENTARY INFORMATION FOR INDUSTRIAL FACILITIES

Instructions: This form should be used to submit the required supplementary information for an application for an NPDES individual permit for industrial facilities. The completed application should be submitted to ADEM in duplicate. If insufficient space is available to address any item, please continue on an attached sheet of paper. Please mark "N/A" in the appropriate box when an item is not applicable to the applicant. **Please type or print legibly in blue or black ink.** Mail the completed application to:

ADEM-Water Division
Industrial Section
P O Box 301463
Montgomery, AL 36130-1463

2018

PURPOSE OF THIS APPLICATION

- ☐ Initial Permit Application for New Facility*
- ☐ Initial Permit Application for Existing Facility*
- ☐ Modification of Existing Permit
- ☒ Reissuance of Existing Permit
- ☐ Revocation & Reissuance of Existing Permit

* *An application for participation in the ADEM's Electronic Environmental (E2) Reporting must be submitted to allow permittee to electronically submit reports as required*

SECTION A – GENERAL INFORMATION

1. Facility Name: 3M Decatur
   a. Operator Name: 3M Company
   b. Is the operator identified in A.1.a, the owner of the facility? ☒ Yes ☐ No
   If no, provide name and address of the operator and submit information indicating the operator's scope of responsibility for the facility.

2. NPDES Permit Number: AL 0 0 0 0 2 0 5 (not applicable if initial permit application)

3. SID Permit Number (if applicable): IU ___ - ___ - ___

4. NPDES General Permit Number (if applicable): ALG ___

5. Facility Physical Location: (**Attach a map with location marked; street, route no. or other specific identifier**)
   Street: 1400 State Docks Road
   City: Decatur County: Morgan State: Alabama Zip: 35601
   Facility Location (Front Gate): Latitude: 34.64070 Longitude: -87.03819

6. Facility Mailing Address: P.O. Box 2206
   City: Decatur County: Morgan State: Alabama Zip: 35609

7. Responsible Official (as described on the last page of this application):
   Name and Title: Michelle Howell, Site Manager
   Address: 1400 State Docks Road
   City: Decatur State: Alabama Zip: 35601
   Phone Number: (256) 552-6300 Email Address: mlhowell@mmm.com

8. Designated Facility Contact:
   Name and Title: Stacee Bland, Environmental Engineer
   Phone Number: (256) 552-6208 Email Address: sbland@mmm.com

9. Designated Discharge Monitoring Report (DMR) Contact:

Name and Title: Stacee Bland, Environmental Engineer

Phone Number: (256) 552-6208 Email Address: sbland@mmm.com

10. Type of Business Entity:

☒ Corporation ☐ General Partnership ☐ Limited Partnership ☐ Limited Liability Company ☐ Sole Proprietorship

☐ Other (Please Specify)________

11. Complete this section if the Applicant's business entity is a Corporation

a) Location of Incorporation:

Address: 3M Center

City: St Paul County: Ramsey State: MN Zip: 55144-1000

b) Parent Corporation of Applicant:

Name: None

Address:

City: State: Zip:

c) Subsidiary Corporation(s) of Applicant:

Name: None

Address:

City: State: Zip:

d) Corporate Officers:

Name: A list of 3M Corporate officers can be found at the following website:

Address: http://investors.3m.com/governance/corporate-officers/default.aspx

City: State: Zip:

Name:

Address:

City: State: Zip:

e) Agent designated by the corporation for purposes of service:

Name: Not applicable

Address:

City: State: Zip:

12. If the Applicant's business entity is a Partnership, please list the general partners.

Name: Not applicable Name:

Address: Address:

City: State: Zip: City: State: Zip:

13. If the Applicant's business entity is a Proprietorship, please enter the proprietor's information.

Name: Not applicable

Address: ______

City: ______ State: ______ Zip: ______

14. Permit numbers for Applicant's previously issued NPDES Permits and identification of any other State of Alabama Environmental Permits presently held by the Applicant, its parent corporation, or subsidiary corporations within the State of Alabama:

Permit Name	Permit Number	Held By
NPDES Permit	AL0000205	3M Company
Title V Air Permit	712-0009	3M Company
RCRA Facility Number	ALD004023164	3M Company

15. Identify all Administrative Complaints, Notices of Violation, Directives, Administrative Orders, or Litigation concerning water pollution, if any, against the Applicant, its parent corporation or subsidiary corporations within the State of Alabama within the past five years (attach additional sheets if necessary):

Facility Name	Permit Number	Type of Action	Date of Action

SECTION B – BUSINESS ACTIVITY

1. Indicate applicable Standard Industrial Classification (SIC) Codes for all processes. If more than one applies, list in order of importance:

a. See Attachment 187-1

b. ______

c. ______

d. ______

e. ______

f. ______

2. If your facility conducts or will be conducting any of the processes listed below (regardless of whether they generate wastewater, waste sludge, or hazardous waste), place a check beside the category of business activity (check all that apply):

Industrial Categories

- ☐ Aluminum Forming
- ☐ Asbestos Manufacturing
- ☐ Battery Manufacturing
- ☐ Can Making
- ☐ Canned and Preserved Fruit and Vegetables
- ☐ Canned and Preserved Seafood
- ☐ Cement Manufacturing
- ☐ Centralized Waste Treatment
- ☐ Carbon Black
- ☐ Coal Mining
- ☐ Coil Coating
- ☐ Copper Forming
- ☐ Electric and Electronic Components Manufacturing
- ☐ Electroplating
- ☐ Explosives Manufacturing
- ☐ Feedlots
- ☐ Ferroalloy Manufacturing
- ☐ Fertilizer Manufacturing
- ☐ Foundries (Metal Molding and Casting)
- ☐ Glass Manufacturing
- ☐ Grain Mills
- ☐ Gum and Wood Chemicals Manufacturing
- ☐ Inorganic Chemicals
- ☐ Iron and Steel
- ☐ Leather Tanning and Finishing
- ☐ Metal Finishing
- ☐ Meat Products
- ☐ Metal Molding and Casting
- ☐ Metal Products
- ☐ Nonferrous Metals Forming
- ☐ Nonferrous Metals Manufacturing
- ☐ Oil and Gas Extraction
- ☒ Organic Chemicals Manufacturing
- ☐ Paint and Ink Formulating
- ☐ Paving and Roofing Manufacturing
- ☐ Pesticides Manufacturing
- ☐ Petroleum Refining
- ☐ Phosphate Manufacturing
- ☐ Photographic
- ☐ Pharmaceutical
- ☐ Plastic & Synthetic Materials
- ☐ Plastics Processing Manufacturing
- ☐ Porcelain Enamel
- ☐ Pulp, Paper, and Fiberboard Manufacturing
- ☒ Rubber
- ☐ Soap and Detergent Manufacturing
- ☐ Steam and Electric
- ☐ Sugar Processing
- ☐ Textile Mills
- ☐ Timber Products
- ☐ Transportation Equipment Cleaning
- ☐ Waste Combustion
- ☒ Other (specify) Plastics Molding and Forming

A facility with processes inclusive in these business areas may be covered by Environmental Protection (EPA) categorical standards. These facilities are termed "categorical users" and should skip to question 2 of Section C.

3. Give a brief description of all operations at this facility including primary products or services (attach additional sheets if necessary):

See Attachment 187-1

SECTION C – WASTEWATER DISCHARGE INFORMATION

Facilities that checked activities in B.2 and are considered Categorical Industrial Users should skip to C.2 of this section.

1. **For Non-Categorical Users Only**: Provide wastewater flows for each of the processes or proposed processes. Using the process flow schematic (Figure 1), enter the description that corresponds to each process. **(The flow schematic should include all treatment units as well as monitoring and discharge points).** [New facilities should provide estimates for each discharge.]

Process Description	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow	Discharge Type (batch, continuous, intermittent)
Not applicable			

If batch discharge occurs or will occur, indicate: [new facilities may estimate.]

a. Number of batch discharges: Not applicable per day

b. Average discharge per batch: ____ (GPD)

c. Time of batch discharges ____ (days of week) at ____ (hours of day)

d. Flow rate: ____ gallons/minute

e. Percent of total discharge: ____

Non-Process Discharges (e.g. non-contact cooling water)	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow
Not applicable		

2. **Complete this Section only if you are subject to Categorical Standards and plan to directly discharge the associated wastewater to a water of the State.** If Categorical wastewater is discharged exclusively via an indirect discharge to a public or privately-owned treatment works, check "Yes" in the appropriate space below and proceed directly to part 2.c .

☐ Yes

For Categorical Users: Provide the wastewater discharge flows or production (whichever is applicable by the effluent guidelines) for each of your processes or proposed processes. Using the process flow schematic (Figure 1, pg 14), enter the description that corresponds to each process. [New facilities should provide estimates for each discharge.]

2a.

Regulated Process	Applicable Category	Applicable Subpart	Type of Discharge Flow (batch, continuous, intermittent)
See Attachment 187-2			

2b.

Process Description	Last 12 Months (gals/day), (lbs/day), etc. Highest Month Average*	Highest Flow Year of Last 5 (gals/day), (lbs/day), etc. Monthly Average*	Discharge Type (batch, continuous, intermittent)
See Attachment 187-2			

*** Reported values should be expressed in units of the applicable Federal production-based standard. For example, flow (MGD), production (pounds per day), etc.**

If batch discharge occurs or will occur, indicate: [new facilities may estimate.]

a. Number of batch discharges: Variable per day

b. Average discharge per batch: Variable (GPD)

c. Time of batch discharges Sun-Sat (days of week) at 0:00-24:00 (hours of day)

d. Flow rate: Variable gallons/minute

e. Percent of total discharge: Variable

2c.

Non categorical Process Description	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow	Discharge Type (batch, continuous, intermittent)
See Attachment 187-2			

If batch discharge occurs or will occur, indicate: [new facilities may estimate.]

a. Number of batch discharges: Variable per day

b. Average discharge per batch: Variable (GPD)

c. Time of batch discharges Sun-Sat (days of week) at 0:00-24:00 (hours of day)

d. Flow rate: Variable gallons/minute

e. Percent of total discharge: Variable

2d.

Non-Process Discharges (e.g. non-contact cooling water)	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow
See Attachment 187-2		

All Applicants must complete C.3 – C.6.

3. Do you share an outfall with another facility? ☐ Yes ■ No (If no, continue to C.4)

For each shared outfall, provide the following:

Applicant's Outfall No.	**Name of Other Permittee/Facility**	**NPDES Permit No.**	**Where is sample collected by Applicant?**
	Not applicable		

4. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current:	Flow Metering	■ Yes	☐ No	☐ N/A
	Sampling Equipment	■ Yes	☐ No	☐ N/A
Planned:	Flow Metering	☐ Yes	☐ No	☐ N/A
	Sampling Equipment	☐ Yes	☐ No	☐ N/A

If so, please attach a schematic diagram of the sewer system indicating the present or future location of this equipment and describe the equipment below:

Continuous flow monitoring is used on DSN 001, 001A, and 001C. Portable ISCO samplers are used to collect composite samples at these three locations. Continuous pH monitoring is currently provided at DSN 001.

5. Are any process changes or expansions planned during the next three years that could alter wastewater volumes or characteristics?
■ Yes ☐ No (If no, continue to C.6)

Briefly describe these changes and their anticipated effects on the wastewater volume and characteristics:

3M is currently installing two new carbon treatment systems to improve effluent quality. Separate notifications regarding these projects have been previously submitted to ADEM.

6. List the trade name and chemical composition of all biocides and corrosion inhibitors used:

Trade Name	Chemical Composition
See Attachment 187-3	

For each biocide and/or corrosion inhibitor used, please include the following information:

(1) 96-hour median tolerance limit data for organisms representative of the biota of the waterway into which the discharge will ultimately reach,
(2) quantities to be used,
(3) frequencies of use,
(4) proposed discharge concentrations, and
(5) EPA registration number, if applicable

SECTION D – WATER SUPPLY

Water Sources (check as many as are applicable):

☐ Private Well ☒ Surface Water

☒ Municipal Water Utility (Specify City): ☐ Other (Specify): ______

IF MORE THAN ONE WELL OR SURFACE INTAKE, PROVIDE DATA FOR EACH ON AN ATTACHMENT

City: 2.2-2.6 MGD* Well: ____ MGD* Well Depth: ____ Ft. Latitude: ____ Longitude: ____

Surface Intake Volume: 4.3-5.5 MGD* Intake Elevation in Relation to Bottom: 522 Ft.

Intake Elevation: 538.3 Ft. Latitude: 34.648762 Longitude: -87.051182

Name of Surface Water Source: Tennessee River (Wheeler Lake)

*** MGD – Million Gallons per Day**

Cooling Water Intake Structure Information

Complete D.1 and D.2 if your water supply is provided by an outside source and not by an onsite water intake structure? (e.g., another industry, municipality, etc...)

1. Does the provider of your source water operate a surface water intake? Yes ☒ No ☐
(If yes, continue, if no, go to Section E.)

a) Name of Provider: Decatur Utilities b) Location of Provider: Decatur, Alabama

c) Latitude: 34.604196 Longitude: -86.960718

2. Is the provider a public water system (defined as a system which provides water to the public for human consumption or which provides only treated water, not raw water)? ☒ Yes ☐ No (If yes, go to Section E, if no, continue.)

Only to be completed if you have a cooling water intake structure or the provider of your water supply uses an intake structure and does not treat the raw water.

3. Is any water withdrawn from the source water used for cooling? ☒ Yes ☐ No

4. Using the average monthly measurements over any 12-month period, approximately what percentage of water withdrawn is used exclusively for cooling purposes? 100 %

5. Does the cooling water consist of treated effluent that would otherwise be discharged? ☐ Yes ☒ No
(If yes, go to Section E, if no, complete D.6 – D.17)

6. a. Is the cooling water used in a once-through cooling system? ☒ Yes ☐ No

b. Is the cooling water used in a closed cycle cooling system? ☐ Yes ☒ No

7. When was the intake installed? 1960
(Please provide dates for all major construction/installation of intake components including screens)

8. What is the maximum intake volume? 16.2 MGD
(maximum pumping capacity in gallons per day)

9. What is the average intake volume? 4.3-5.5 MGD
(average intake pump rate in gallons per day average in any 30-day period)

10. What is the actual intake flow (AIF) as defined in 40 CFR §125.92(a)? 4.3 MGD

11. How is the intake operated? (e.g., continuously, intermittently, batch) continuously

12. What is the mesh size of the screen on your intake? 1/2 inch space with 18 gauge stainless steel wire

13. What is the intake screen flow-through area? 81 ft sq total free space per sump. 5400 gpm pump in each sump

14. What is the through-screen design intake flow velocity? 0.206 ft/sec (at Low Water Level - 550 ft MSL)

15. What is the through-screen actual velocity (in ft/sec)? 0.107 ft/sec (at NWL - 556 ft MSL & AIF)

16. What is the mechanism for cleaning the screen? (e.g., does it rotate for cleaning) Quarterly PM to clean by taking out of service and washing off to remove debris

17. Do you have any additional fish detraction technology on your intake? ☐ Yes ■ No

18. Have there been any studies to determine the impact of the intake on aquatic organisms? ☐ Yes ■ No (If yes, please provide.)

19. Attach a site map showing the location of the water intake in relation to the facility, shoreline, water depth, etc. See Figure 1-1

SECTION E – WASTE STORAGE AND DISPOSAL INFORMATION

Provide a description of the location of all sites involved in the storage of solids or liquids that could be accidentally discharged to a water of the state, either directly or indirectly via such avenues as storm water drainage, municipal wastewater systems, etc., which are located at the facility for which the NPDES application is being made. Where possible, the location should be noted on a map and included with this application:

Description of Waste	Description of Storage Location
This information is contained in EPA form 2F and the referenced	attachments from that form.

Provide a description of the location of the ultimate disposal sites of solid or liquid waste by-products (such as sludges) from any wastewater treatment system located at the facility.

Description of Waste	Quantity (lbs/day)	Disposal Method*
See Attachment 187-4		

***Indicate which wastes identified above are disposed of at an off-site treatment facility and which are disposed of on-site. If any wastes are sent to an off-site centralized waste treatment facility, identify the waste and the facility.**

SECTION F – COASTAL ZONE INFORMATION

Is the discharge(s) located within the 10-foot elevation contour and within the limits of Mobile or Baldwin County? ☐ Yes ■ No

If yes, complete items F.1 – F.12:

	Yes	No
1. Does the project require new construction?	☐	☐
2. Will the project be a source of new air emissions?	☐	☐

		Yes	No
3.	Does the project involve dredging and/or filling of a wetland area or water way?	☐	☐
	If Yes, has the Corps of Engineers (COE) permit been received?	☐	☐
	COE Project No. ____________________		
4.	Does the project involve wetlands and/or submersed grassbeds?	☐	☐
5.	Are oyster reefs located near the project site?	☐	☐
	If Yes, include a map showing project and discharge location with respect to oyster reefs		
6.	Does the project involve the site development, construction and operation of an energy facility as defined in ADEM Admin. Code r. 335-8-1-.02(bb)?	☐	☐
7.	Does the project involve mitigation of shoreline or coastal area erosion?	☐	☐
8.	Does the project involve construction on beaches or dune areas?	☐	☐
9.	Will the project interfere with public access to coastal waters?	☐	☐
10.	Does the project lie within the 100-year floodplain?	☐	☐
11.	Does the project involve the registration, sale, use, or application of pesticides?	☐	☐
12.	Does the project propose or require construction of a new well or to alter an existing groundwater well to pump more than 50 gallons per day (GPD)?	☐	☐
	If yes, has the applicable permit for groundwater recovery or for groundwater well installation been obtained?	☐	☐

SECTION G – ANTI-DEGRADATION EVALUATION

In accordance with 40 CFR §131.12 and the ADEM Admin. Code r. 335-6-10-.04 for anti-degradation, the following information must be provided, if applicable. It is the applicant's responsibility to demonstrate the social and economic importance of the proposed activity. If further information is required to make this demonstration, attach additional sheets to the application.

1. Is this a new or increased discharge that began after April 3, 1991? ☐ Yes ☒ No
   If yes, complete G.2 below. If no, go to Section H.

2. Has an Anti-Degradation Analysis been previously conducted and submitted to the Department for the new or increased discharge referenced in G.1? ☐ Yes ☐ No

   If yes, do not complete this section. If no, and the discharge is to a Tier II waterbody as defined in ADEM Admin. Code r. 335-6-10-.12(4), complete G.2.A – G.2.F below and ADEM Forms 311 and 313 (attached). ADEM Form 313 must be provided for each alternative considered technically viable.

   Information required for new or increased discharges to high quality waters:

   A. What environmental or public health problem will the discharger be correcting?

   ____

   B. How much will the discharger be increasing employment (at its existing facility or as the result of locating a new facility)?

   ____

   C. How much reduction in employment will the discharger be avoiding?

   ____

   D. How much additional state or local taxes will the discharger be paying?

   ____

   E. What public service to the community will the discharger be providing?

   ____

   F. What economic or social benefit will the discharger be providing to the community?

   ____

SECTION H – EPA Application Forms

All Applicants must submit EPA permit application forms. More than one application form may be required from a facility depending on the number and types of discharges or outfalls found. The EPA application forms are found on the Department's website at http://www.adem.alabama.gov/programs/water/waterforms.cnt . The EPA application forms must be submitted in duplicate as follows:

1. All applicants must submit Form 1.
2. Applicants for existing industrial facilities (including manufacturing facilities, commercial facilities, mining activities, and silvicultural activities) which discharge process wastewater must submit Form 2C.
3. Applicants for new industrial facilities which propose to discharge process wastewater must submit Form 2D.
4. Applicants for new and existing industrial facilities which discharge only non-process wastewater (i.e., non-contact cooling water and/or sanitary wastewater) must submit Form 2E.
5. Applicants for new and existing facilities whose discharge is composed entirely of storm water associated with industrial activity must submit Form 2F, unless exempted by § 122.26(c)(1)(ii). If the discharge is composed of storm water and non-storm water, the applicant must also submit Forms 2C, 2D, and/or 2E, as appropriate (in addition to Form 2F).

SECTION I – ENGINEERING REPORT/BMP PLAN REQUIREMENTS

See ADEM 335-6-6-.08(i) & (j)

SECTION J– RECEIVING WATERS

Outfall No.	Receiving Water(s)	303(d) Segment?	Included in TMDL?*
DSN 001	Tennessee River (Wheeler Lake)	☒ Yes ☐ No	☐ Yes ☒ No
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No
		☐ Yes ☐ No	☐ Yes ☐ No

*If a TMDL Compliance Schedule is requested, the following should be attached as supporting documentation:

(1) Justification for the requested Compliance Schedule (e.g. time for design and installation of control equipment, etc.);

(2) Monitoring results for the pollutant(s) of concern which have not previously been submitted to the Department (sample collection dates, analytical results (mass and concentration), methods utilized, MDL/ML, etc. should be submitted as available);

(3) Requested interim limitations, if applicable;

(4) Date of final compliance with the TMDL limitations; and,

(5) Any other additional information available to support requested compliance schedule.

SECTION K – APPLICATION CERTIFICATION

The information contained in this form must be certified by a responsible official as defined in ADEM Administrative Code r. 335-6-6-.09 "signatories to permit applications and reports" (see below).

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible Official: ______________ Date Signed: 08/28/2018

Name and Title: Michelle Howell, Site Manager

If the Responsible Official signing this application is not identified in Section A.7, provide the following information:

Mailing Address: ______________

City: ______________ State: ______________ Zip: ______________

Phone Number: ______________ Email Address: ______________

335-6-6-.09 SIGNATORIES TO PERMIT APPLICATIONS AND REPORTS.

(1) The application for an NPDES permit shall be signed by a responsible official, as indicated below:

(a) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a manager assigned or delegated in accordance with corporate procedures, with such delegation submitted in writing if required by the Department, who is responsible for manufacturing, production, or operating facilities and is authorized to make management decisions which govern the operation of the regulated facility;

(b) In the case of a partnership, by a general partner;

(c) In the case of a sole proprietorship, by the proprietor; or

(d) In the case of a municipal, state, federal, or other public entity, by either a principal executive officer, or ranking elected official.

Attachment 187-1: Business Activity

Response to ADEM Form 187 Section B and Form 1 Section XII

The ADEM and federal NPDES forms that reference this attachment request information on the Standard Industrial Classification (SIC) codes for these manufacturing activities. The U.S. government established SIC codes, which were subsequently replaced by the North American Industrial Classification System (NAICS) codes, for its own purposes of gathering statistical data. The codes are used to classify establishments by their primary economic activity, and thus data can be compared for describing various industries. The codes themselves may be technically ambiguous since final products can be reasonably reported under various categories. The conversion from SIC to NAICS codes further complicated these descriptions since multiple cross-references may be applied. Finally, the determination of the primary activity may be difficult for those sites that manufacture many different products. Discussion on applicable SIC/NAICS codes for each manufacturing activity are provided in following sections. All manufacturing activities wastewaters combine and are treated in the Site Wastewater Treatment facility.

A. Chemicals Manufacturing

1. Facility Description

The chemicals manufactured include a wide variety of semi-finished chemical products in flexible batch processing equipment. These products include adhesives, coatings, and other specialty chemicals. Many of these products are utilized at other 3M facilities to manufacture finished products. The process equipment typically consists of a group of reactors which can be reconfigured for each product. These processes use a wide range of inorganic and organic feedstocks.

The primary NAICS code that has been used to describe the primary manufacturing activities is 325520 (Adhesive Manufacturing). The SIC equivalent is 2891 (Adhesives and Sealants). This designation was determined by reviewing the pounds of products produced in the past year. Over 60% of the chemicals manufactured in 2017 were classified as adhesives.

2. Review of Effluent Guidelines

Wastewaters from these operations are produced from vacuum system operation, equipment cleaning, and various other processes.

In reviewing the potential applicability of categorical treatment standards to the chemical manufacturing activities based on the primary SIC code (2891), 3M does not believe that any of the effluent guidelines are applicable to the Chemical Manufacturing operations at the facility.

SIC codes applicable to 40 CFR 414, Organic Chemicals, Plastics and Synthetic Fibers (OCPSF), include: 2821, 2823, 2824, 2865, and 2869. 3M Decatur does not claim any of these SIC codes for its Chemicals Manufacturing facility. Therefore, the provisions of 414 do not apply.

Also, the Chemical Manufacturing activities do not manufacture Soaps and Detergents (Part 417), Pharmaceuticals (Part 439), Oil-based paints (Part 446) or Oil-based Inks (Part 447), Rubber Products (Part 428) or Pesticides (Part 445), and the site is not a Centralized Wastewater Treatment Facility (Part 437).

B. Elastomers Manufacturing

1. Facility Description

The elastomers manufacturing process produces fluoroelastomers using semi-batch reactions. Gaseous fluoromonomers are metered into a reactor containing hot water and polymerization initiators. When the polymerization is complete, the latex containing the fluoroelastomer is transferred for further processing. The fluoroelastomer is separated from the water in a "coagulation" operation. The coagulated solid elastomer material is washed with water to remove the remaining reaction ingredients and byproducts. Finally, the wet elastomer is dried. The "raw gum" elastomer may be mixed with cross-linking agents and other additives and packaged.

These products are reported under NAICS and SIC codes 325212 (Synthetic Rubber Manufacturing) and 2822 (Synthetic Rubber), respectively.

2. Review of Categorical Treatment Standards

Elastomers manufactures products that are latex rubbers; therefore, this process is subject to the effluent guidelines outlined in 40 CFR Part 428 - Rubber Manufacturing Point Source Category, Subpart D - Latex Rubber Subcategory.

C. Plastics Manufacturing

1. Facility Description

There are two separate activities included in plastics manufacturing operations.

Vinylidene fluoride (VDF) monomer is produced by the dehydrohalogenation of 1-chloro-1,1 difluoroethane (HCFC-142b) in a pyrolysis furnace. The compounds exiting this process include VDF, hydrochloric acid (HCl), and various reaction byproducts. VDF is isolated in a scrubbing process which removes the HCl. VDF is transferred to storage tanks. Light and heavy residues from the production process are stored in tanks prior to being transported off-site for disposal.

Polyvinylidene fluoride (PVDF) is a solid resin produced from the polymerization of VDF with various proprietary co-monomers. PVDF is produced in a batch polymerization process involving the introduction of VDF and co-monomers with other additives introduced into a heated reactor. Other reactants and/or catalysts are added as necessary to complete the process. PVDF manufacturing operations also include a compounding process that utilizes cooling water as a part of a pelletizing operation. These materials are transferred off-site.

The HCl from the scrubbing process and caustic solutions that are generated during the above described activities may be treated in 3M's wastewater treatment plant. Alternatively, these by-product streams may be transferred to an on-site treatment facility, currently operated by a third-party vendor, that are collocated with 3M's VDF/PVDF manufacturing operations. For the most part, HCl from these operations is transferred to off-site locations for a variety of industrial uses.

VDF monomer production is classified under the NAICS and SIC codes 325998 (All Other Miscellaneous Chemical Product and Preparation Manufacturing) and 2869 (Industrial Organic Chemicals, Not elsewhere classified), respectively. PVDF polymer manufacturing operations are classified under the NAICS and SIC codes 325211 (Plastics Material and Resin Manufacturing) and 2821 (Plastic Materials and Resins), respectively.

2. Review of Effluent Guidelines

Both 2821 and 2869 are listed as applicable SIC codes that are covered under 40 CFR Part 414 - Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF). VDF production is subject to Subpart H - Specialty Organic Chemicals, while PVDF production is subject to Subpart D - Thermoplastic Resins.

The wastewaters of these operations are discharged through internal outfall DSN 001C.

D. Film Manufacturing

1. Facility Description

This facility manufactures a broad range of specialty films. Most of these films are manufactured from polyester resin. The primary products manufactured include multi-layer optical film and extrusion coated film. Some of these films may be used at other 3M locations to produce a variety of finished products.

Resins that are both purchased and manufactured onsite, as well as other additives, are conveyed to extruders which produce a plastics sheet that is further processed to produce specific thicknesses and other performance characteristics. Some of the films may be coated with various solutions depending upon the specific product end use. Finally, various converting operations may be used to produce desired film widths. Many of the production processes at the plant incorporate recycling operations that are intended to recover and reuse film that is lost during the manufacturing processes.

The primary activity of these operations has been described under NAICS code 326113 (Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing). The equivalent SIC code for this manufacturing is 3081 (Unsupported Plastics Film and Sheet).

2. Review of Effluent Guidelines

40 CFR 463, Plastics Molding and Forming, includes pretreatment regulations for processes that produce wastewater from plastics molding forming processes including extrusion, molding, coating and laminating, thermoforming, calendaring, casting, foaming, cleaning, and finishing.

The film manufacturing operations at 3M Decatur do not produce wastewater that contacts resin/film products during shaping and do not discharge wastewater generated by the cleaning of equipment used to shape the film. The manufacturing operations also do not discharge wastewater from the film coating process. Only wastewater that does not directly contact the film or shaping equipment is discharged. Therefore, part 40 CFR Part 463 does not apply to the facility.

E. Resin Manufacturing

1. Facility Description

Resin manufacturing operations produce a majority of the polyester resin utilized in the onsite film manufacturing process. The resin is manufactured in chemical processing equipment with the primary raw materials being ethylene glycol and dimethylterephthate or terephthalic acid. The manufacturing processes which are employed to produce the different resin products are very similar. Catalysts and other additives and resins may also be added to the process depending on the specific resin that is being manufactured. The molten plastic material is pelletized and cooled in a water bath before being conveyed to storage silos.

These operations would be classified under SIC code 2821 (Plastics Materials and Resins). The corresponding NAICS Code is 325211 (Plastics Material and Resin Manufacturing).

2. Review of Effluent Guidelines

Wastewaters that are generated in these operations include wastewater from air pollution control scrubbers, vacuum systems, and area clean-up. Water is also utilized in a closed loop piece of equipment to cool the molten polyester. Wastewater is generated when the system is drained for cleaning purposes.

Approximately 60% of the resin produced at the facility is used onsite in film manufacturing. Because of this, these resin manufacturing activities are subject to 40 CFR Part 463 - Plastics Molding and Forming, Subpart A - Contact Cooling and Heating.

Attachment 187-2: Wastewater Discharge Information

Response to ADEM Form 187 Section C - 2a & 2b

Process/Facility Location	Regulated Process Activity	Applicable Category	Applicable Subpart	Type of Discharge	Last 12 Months (gal/day), (lbs/day), etc. Highest Monthly Average	Highest Flow Year of Last 5 (gal/day), (lbs/day), etc. Monthly Average
Elastomers Manufacturing	Latex Rubber Production	428	D	Batch	[redacted]	
Plastics Manufacturing	VDF and PVDF Production	414	H,D	VDF - Continuous PVDF - Batch	100,000 gal/day	160,000 gal/day
Resin Manufacturing	Polyester Resin Production	463	A	Batch	125,000 gal/day	150,000 gal/day

Response to ADEM Form 187 Section C - 2c & 2d

Non-Categorical Process Description	Last 12 Months (gal/day) Highest Monthly Average	Highest Flow Year of Last 5 (gal/day) Monthly Average
Film Manufacturing	375,000	650,000
Chemicals Manufacturing	900,000	1,100,000
Utilities	140,000	200,000
Sanitary	20,000	20,000
Groundwater	30,000	30,000
Noncontact Cooling Water Usage	4,300,000	5,500,000

Values listed in this section are general estimates

Attachment 187-3: Biocides and Corrosion Inhibitors

Response to ADEM Form 187 Section C.6

Trade Name	Chemical composition	Quantity Used (lbs/day)	Frequency of Use	Aquatic Toxicity Values (species used in WET testing)	Proposed Discharge Concentations (mg/l)**	Comments
Spectrus OX103	80% BROMO-CHLORO, 5,5-DIMETHYL HYDANTOIN	5	continuous	Fathead minnow: 2.43 mg/L daphnia magna: 0.49 mg/l*	0.09	Active ingredient will hydrolize to biodegradable compounds.
Spectrus NX1106	5% magnesium nitrate 5% isothiazolin	10	4x/week	Fathead minnow: 6.6 mg/L Daphnia magna: 2.9 mg/l*	0.11	Some of the active ingredients are readily biodegradable and should be reduced in wastewater treatment.
Bleach	sodium hypochlorite	57	continuous	Fathead minnow: 5.6 mg/L daphnia magna: 1.6 mg/l*	Not applicable	The active ingredient will be totally consumed either during use or during wastewater transmission and treatment
Inhibitor AZ8104	15% chlorotolytriazole 10% dichlorotolytriazole 2.5% benzotriazole 2.5% NaOH	10	continuous	Fathead minnow: 135 mg/L daphnia magna: 217 mg/l* ceriodaphnia: 124 mg/l*	1.00	Some biodegradation of active ingredient is possible.
Flogard MS6214	potassium hydroxide	17	continuous	Fathead minnow: 1000 mg/L daphnia magna: 1000 mg/l*	NA	Neutralized to potassium salt.
Gengard GN8118	2.5% chlorotolytriazole 2.5% NaOH	36	continuous	Fathead minnow: 250 mg/L daphnia magna: 1569 mg/l*	1.00	Some neutralization
Gengard GN8115	7% acrylate terpolymer 1% chlortriazole	36	continuous	Fathead minnow: 502 mg/L daphnia magna: 2549 mg/l*	0.67	Some biodegradation expected in activated sludge system
Corrshield NT402	30% sodium nitrate 5% boric acid	10	2x/year	Fathead minnow: 1072 mg/L daphnia magna: 38 mg/l*	0.05	Boric acid will be neutralized during wastewater treatment.
Corrshield MD4100	20% Nitrate	25	4x/year	Fathead minnow: 2730 mg/L daphnia magna: 5997 mg/l*	0.05	
Steamate NF770	dimethylaminopropylamine (27%) 3-methoxypropylamine (15%)	4	continuous	Fathead minnow: 10.3 mg/L daphnia magna: 3.3 mg/l*	0.07	Significant biodegradation of these materials is expected in the site activated sludge system

* 48-hour medium tolerance value

** Discharges of wastewaters that contain these materials are sent to the site's wastewater treatment system. Many of the materials on this list are acids or bases that will be neutralized to salts in the wastewater treatment system. These may be listed as NA in this column. The active ingredients for most of the remaining compounds will be eliminated due a variety of mechanisms including hydrolysis and biodegradation. However, in determining the estimated effluent concentrations it was assumed that no attenuation would occur. In all cases the estimated (unattenuated) effluent concentrations were below the relevant aquatic toxicity values. 3M can provide more specific estimates of the actual effluent concentrations at ADEM's request.

Attachment 187-4: Wastewater Treatment Sludges and Wastes

Response to ADEM Form 187 Section E

Description of Waste	Quantity (lbs/day)	Disposal Method
Dewatered Wastewater Sludge	8200 lb/day	Off-site Landfill
Steam Stripper Condensate	225 lb/day	Off-site Incineration
Bar Screening waste and other misc. solids	<20 lbs/day	Off-site Landfill
Waste Granular Activated Carbon	55 lbs/day	Regeneration by vendor
Ion Exchange Extractant	<30 lbs/day	Off-site Incineration

Please print or type in the unshaded areas only.

Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S / F		T/A	C
F	AL0000205		D

LABEL ITEMS	
I. EPA I.D. NUMBER	PLEASE PLACE LABEL IN THIS SPACE
III. FACILITY NAME	
V. FACILITY MAILING ADDRESS	
VI. FACILITY LOCATION	

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)		X	
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	X		X
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)	X		
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP 3M Decatur

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 Bland, Stacee - Environmental Engineer	(256) 552-6208

V. FACILTY MAILING ADDRESS

A. STREET OR P.O. BOX

3 PO Box 2206

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 Decatur	AL	35609

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 1400 State Docks Road

B. COUNTY NAME

Morgan

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 Decatur	AL	35601	

2018

EPA Form 3510-1 (8-90)

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST		B. SECOND	
7 3081	(specify) Unsupported Plastics Film and Sheet	7 2822	(specify) Synthetic Rubber
C. THIRD		**D. FOURTH**	
7 2891	(specify) Adhesives and Chemical Preparations	7 2821	(specify) Plastics Materials and Resins

VIII. OPERATOR INFORMATION

A. NAME: 8 3M Company

B. Is the name listed in Item VIII-A also the owner? ☑ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other," specify.)

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

Answer: P — (specify) NA

D. PHONE (area code & no.): A (256) 552-6010

E. STREET OR P.O. BOX: PO Box 2206

F. CITY OR TOWN	G. STATE	H. ZIP CODE
B Decatur	AL	35609

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)	
9 N AL0000205	9 P	
B. UIC (Underground Injection of Fluids)	**E. OTHER (specify)**	
9 U NA	9 712-0009	(specify) Title V Operating Permit
C. RCRA (Hazardous Wastes)	**E. OTHER (specify)**	
9 R ALD004023164	9	(specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements. See Figure 1-1

XII. NATURE OF BUSINESS (provide a brief description)

See Attachment 187-1

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

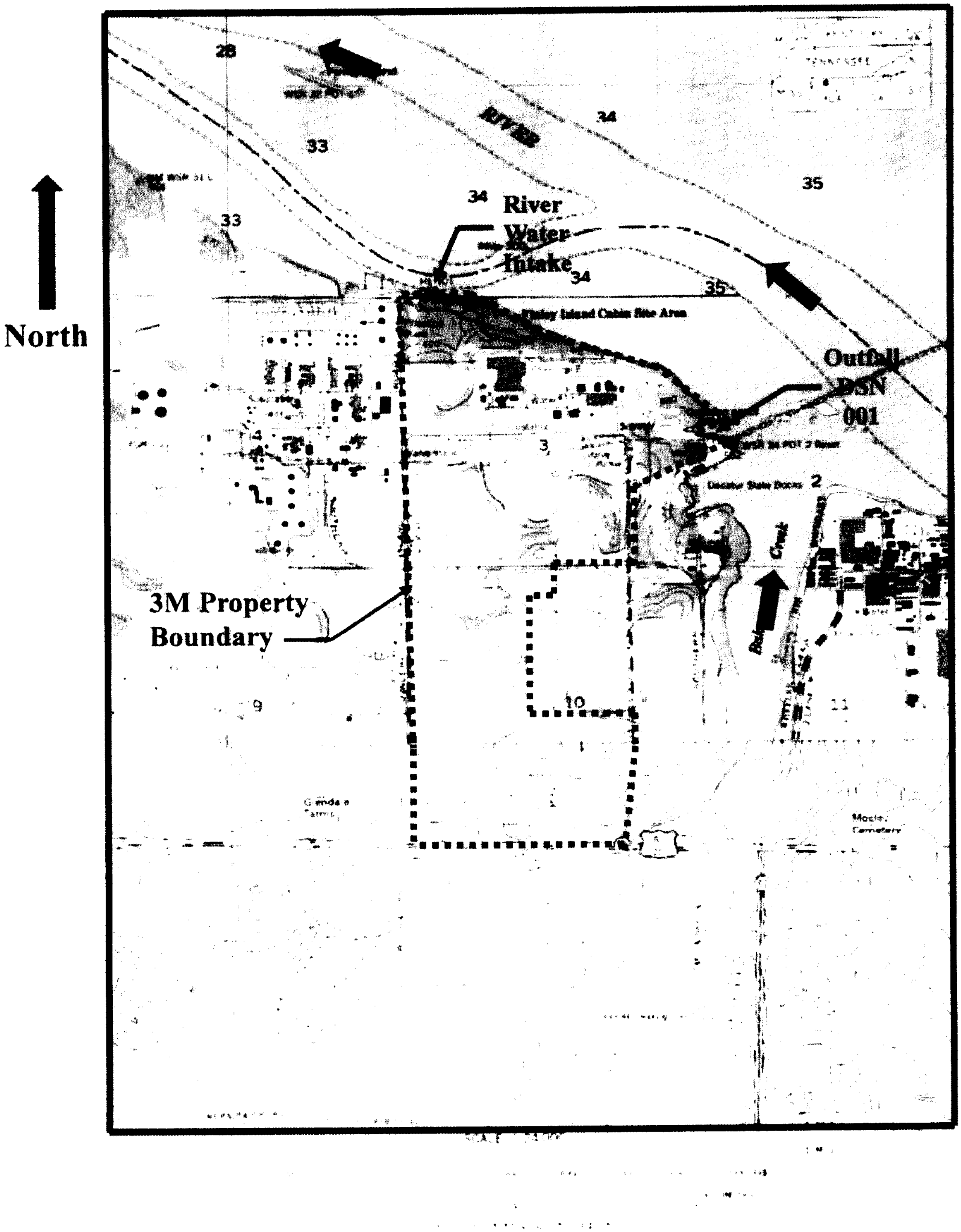
A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Michelle Howell	Michelle Howell	08/28/2018

COMMENTS FOR OFFICIAL USE ONLY

C

Figure 1-1: Topographic Map

Response to Form 1 Section XI



Please print or type in the unshaded areas only.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)
AL0000205

Form Approved.
OMB No. 2040-0086.
Approval expires 3-31-98.

FORM **2C** NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (*list*)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (*name*)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
DSN 001	34.00	38.00	29.00	-87.00	2.00	7.00	Tennessee River
001A, 001B,							(001A, 001B, and 001C are all
and 001C							contributing outfalls; DSN 001 is the
							combined discharge of all outfalls)

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. See Figure 2C-1

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUT-FALL NO. (*list*)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (*list*)	b. AVERAGE FLOW (*include units*)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
	See Attachment 2C-2 for this table,				
	narrative description of treatment,				
	and treatment design information.				

OFFICIAL USE ONLY (*effluent guidelines sub-categories*)

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ YES (*complete the following table*) ☑ NO (*go to Section III*)

1. OUTFALL NUMBER (*list*)	2. OPERATION(s) CONTRIBUTING FLOW (*list*)	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK (*specify average*)	b. MONTHS PER YEAR (*specify average*)	a. FLOW RATE (*in mgd*)		B. TOTAL VOLUME (*specify with units*)		C. DURATION (*in days*)
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☑ YES (*complete Item III-B*) ☐ NO (*go to Section IV*)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (*or other measure of operation*)?

☑ YES (*complete Item III-C*) ☐ NO (*go to Section IV*)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS (*list outfall numbers*)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (*specify*)	
[redacted]		Elastomers Manufacturing	DSN 001A, DSN 001

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operations of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (*complete the following table*) ☑ NO (*go to Item IV-B*)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (*or other environmental projects which may affect your discharges*) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

 CONTINUE ON PAGE 3

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)
ALD000205

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
See Attachment 2C-3	The list of constituents is based on a review of raw material usage at the plant which could result in the presence of these materials in regulated outfalls.		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☑ YES (*list all such pollutants below*) ☐ NO (*go to Item VI-B*)

See Attachment 2C-4 for a summary of quarterly NPDES permit testing for perfluoroalkyl substances for outfall DSN 001 (first quarter 2015 through first quarter 2018) and a description of process wastewater that may contain perfluoroalkyl and polyfluoroalkyl substances.

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☑ YES (*identify the test(s) and describe their purposes below*) ☐ NO (*go to Section VIII*)

Whole Effluent (Acute) Toxicity testing is currently conducted on Outfall DSN 001 quarterly for ceriodaphnia and pimephales.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☑ YES (*list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below*) ☐ NO (*go to Section IX*)

A. NAME	B. ADDRESS	C. TELEPHONE (*area code & no.*)	D. POLLUTANTS ANALYZED (*list*)
Enersolv (performs sampling)	2220 Beltline Road Decatur, AL 35601	(256) 350-0846	All NPDES Form 2C parameters
Pace Analytical (sample analysis)	1800 Elm Street SE Minneapolis, MN 55414	(612) 607-6400	All NPDES Form 2C parameters except for PFAS

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (*type or print*)	B. PHONE NO. (*area code & no.*)
Michelle Howell	(256) 552-6300
C. SIGNATURE: Michelle Howell	D. DATE SIGNED: 08/28/2018

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages.
SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)
AL0000205

V. INTAKE AND EFFLUENT CHARACTERISTICS (*continued from page 3 of Form 2-C*)

OUTFALL NO.
DSN 001

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS (*specify if blank*)		4. INTAKE (*optional*)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (*BOD*)												
b. Chemical Oxygen Demand (*COD*)												
c. Total Organic Carbon (*TOC*)												
d. Total Suspended Solids (*TSS*)												
e. Ammonia (*as N*)												
f. Flow												
g. Temperature (*winter*)												
h. Temperature (*summer*)												
i. pH												

See Attachment 2C-3. Only results for DSN 001 are included in this application - 001A, 001B, and 001C are internal monitoring streams only. DSN 001 is the combined discharge of all process outfalls and the point of surface discharge.

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)														
b. Chlorine, Total Residual														
c. Color														
d. Fecal Coliform														
e. Fluoride (16984-48-8)														
f. Nitrate-Nitrite (*as N*)														

See Attachment 2C-3

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (*as N*)														
h. Oil and Grease														
i. Phosphorus (as P), Total (7723-14-0)														
j. Radioactivity														
(1) Alpha, Total														
(2) Beta, Total														
(3) Radium, Total														
(4) Radium 226, Total														
k. Sulfate (*as* SO_4) (14808-79-8)														
l. Sulfide (*as S*)														
m. Sulfite (*as* SO_3) (14265-45-3)														
n. Surfactants														
o. Aluminum, Total (7429-90-5)														
p. Barium, Total (7440-39-3)														
q. Boron, Total (7440-42-8)														
r. Cobalt, Total (7440-48-4)														
s. Iron, Total (7439-89-6)														
t. Magnesium, Total (7439-95-4)														
u. Molybdenum, Total (7439-98-7)														
v. Manganese, Total (7439-96-5)														
w. Tin, Total (7440-31-5)														
x. Titanium, Total (7440-32-6)														

See Attachment 2C-3

 CONTINUE ON PAGE V-3

CONTINUED FROM PAGE 3 OF FORM 2-C

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
AL0000205	DSN 001

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)															
2M. Arsenic, Total (7440-38-2)															
3M. Beryllium, Total (7440-41-7)															
4M. Cadmium, Total (7440-43-9)															
5M. Chromium, Total (7440-47-3)															
6M. Copper, Total (7440-50-8)															
7M. Lead, Total (7439-92-1)															
8M. Mercury, Total (7439-97-6)															
9M. Nickel, Total (7440-02-0)															
10M. Selenium, Total (7782-49-2)															
11M. Silver, Total (7440-22-4)															
12M. Thallium, Total (7440-28-0)															
13M. Zinc, Total (7440-66-6)															
14M. Cyanide, Total (57-12-5)															
15M. Phenols, Total															
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)															

See Attachment 2C-3

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Accrolein (107-02-8)															
2V. Acrylonitrile (107-13-1)															
3V. Benzene (71-43-2)															
4V. Bis (*Chloro-methyl*) Ether (542-88-1)															
5V. Bromoform (75-25-2)															
6V. Carbon Tetrachloride (56-23-5)															
7V. Chlorobenzene (108-90-7)															
8V. Chlorodi-bromomethane (124-48-1)															
9V. Chloroethane (75-00-3)															
10V. 2-Chloro-ethylvinyl Ether (110-75-8)															
11V. Chloroform (67-66-3)															
12V. Dichloro-bromomethane (75-27-4)															
13V. Dichloro-difluoromethane (75-71-8)															
14V. 1,1-Dichloro-ethane (75-34-3)															
15V. 1,2-Dichloro-ethane (107-06-2)															
16V. 1,1-Dichloro-ethylene (75-35-4)															
17V. 1,2-Dichloro-propane (78-87-5)															
18V. 1,3-Dichloro-propylene (542-75-6)															
19V. Ethylbenzene (100-41-4)															
20V. Methyl Bromide (74-83-9)															
21V. Methyl Chloride (74-87-3)															

See Attachment 2C-3

CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (*continued*)															
22V. Methylene Chloride (75-09-2)															
23V. 1,1,2,2-Tetrachloroethane (79-34-5)															
24V. Tetrachloro-ethylene (127-18-4)															
25V. Toluene (108-88-3)															
26V. 1,2-Trans-Dichloroethylene (156-60-5)															
27V. 1,1,1-Trichloro-ethane (71-55-6)															
28V. 1,1,2-Trichloro-ethane (79-00-5)															
29V Trichloro-ethylene (79-01-6)															
30V. Trichloro-fluoromethane (75-69-4)															
31V. Vinyl Chloride (75-01-4)															
GC/MS FRACTION															
1A. 2-Chlorophenol (95-57-8)															
2A. 2,4-Dichloro-phenol (120-83-2)															
3A. 2,4-Dimethyl-phenol (105-67-9)															
4A. 4,6-Dinitro-O-Cresol (534-52-1)															
5A. 2,4-Dinitro-phenol (51-28-5)															
6A. 2-Nitrophenol (88-75-5)															
7A. 4-Nitrophenol (100-02-7)															
8A. P-Chloro-M-Cresol (59-50-7)															
9A. Pentachloro-phenol (87-86-5)															
10A. Phenol (108-95-2)															
11A. 2,4,6-Trichloro-phenol (88-05-2)															

See Attachment 2C-3

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)															
2B. Acenaphtylene (208-96-8)															
3B. Anthracene (120-12-7)															
4B. Benzidine (92-87-5)															
5B. Benzo (*a*) Anthracene (56-55-3)															
6B. Benzo (*a*) Pyrene (50-32-8)															
7B. 3,4-Benzo-fluoranthene (205-99-2)															
8B. Benzo (*ghi*) Perylene (191-24-2)															
9B. Benzo (*k*) Fluoranthene (207-08-9)															
10B. Bis (*2-Chloroethoxy*) Methane (111-91-1)															
11B. Bis (*2-Chloroethyl*) Ether (111-44-4)															
12B. Bis (*2-Chloroisopropyl*) Ether (102-80-1)															
13B. Bis (*2-Ethylhexyl*) Phthalate (117-81-7)															
14B. 4-Bromophenyl Phenyl Ether (101-55-3)															
15B. Butyl Benzyl Phthalate (85-68-7)															
16B. 2-Chloro-naphthalene (91-58-7)															
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)															
18B. Chrysene (218-01-9)															
19B. Dibenzo (*a,h*) Anthracene (53-70-3)															
20B. 1,2-Dichloro-benzene (95-50-1)															
21B. 1,3-Di-chloro-benzene (541-73-1)															

See Attachment 2C-3

 CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1,4-Dichloro-benzene (106-46-7)															
23B. 3,3-Dichloro-benzidine (91-94-1)															
24B. Diethyl Phthalate (84-66-2)															
25B. Dimethyl Phthalate (131 -11-3)															
26B. Di-N-Butyl Phthalate (84-74-2)															
27B. 2,4-Dinitro-toluene (121-14-2)															
28B. 2,6-Dinitro-toluene (606-20-2)															
29B. Di-N-Octyl Phthalate (117-84-0)															
30B. 1,2-Diphenyl-hydrazine (*as Azo-benzene*) (122-66-7)															
31B. Fluoranthene (206-44-0)															
32B. Fluorene (86-73-7)															
33B. Hexachloro-benzene (118-74-1)															
34B. Hexachloro-butadiene (87-68-3)															
35B. Hexachloro-cyclopentadiene (77-47-4)															
36B Hexachloro-ethane (67-72-1)															
37B. Indeno (*1,2,3-cd*) Pyrene (193-39-5)															
38B. Isophorone (78-59-1)															
39B. Naphthalene (91-20-3)															
40B. Nitrobenzene (98-95-3)															
41B. N-Nitro-sodimethylamine (62-75-9)															
42B. N-Nitrosodi-N-Propylamine (621-64-7)															

See Attachment 2C-3

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
43B. N-Nitro-sodiphenylamine (86-30-6)															
44B. Phenanthrene (85-01-8)															
45B. Pyrene (129-00-0)															
46B. 1,2,4-Tri-chlorobenzene (120-82-1)															
GC/MS FRACTION															
1P. Aldrin (309-00-2)															
2P. α-BHC (319-84-6)															
3P. β-BHC (319-85-7)															
4P. γ-BHC (58-89-9)															
5P. δ-BHC (319-86-8)															
6P. Chlordane (57-74-9)															
7P. 4,4'-DDT (50-29-3)															
8P. 4,4'-DDE (72-55-9)															
9P. 4,4'-DDD (72-54-8)															
10P. Dieldrin (60-57-1)															
11P. α-Enosulfan (115-29-7)															
12P. β-Endosulfan (115-29-7)															
13P. Endosulfan Sulfate (1031-07-8)															
14P. Endrin (72-20-8)															
15P. Endrin Aldehyde (7421-93-4)															
16P. Heptachlor (76-44-8)															

See Attachment 2C-3

CONTINUE ON PAGE V-9

CONTINUED FROM PAGE V-8

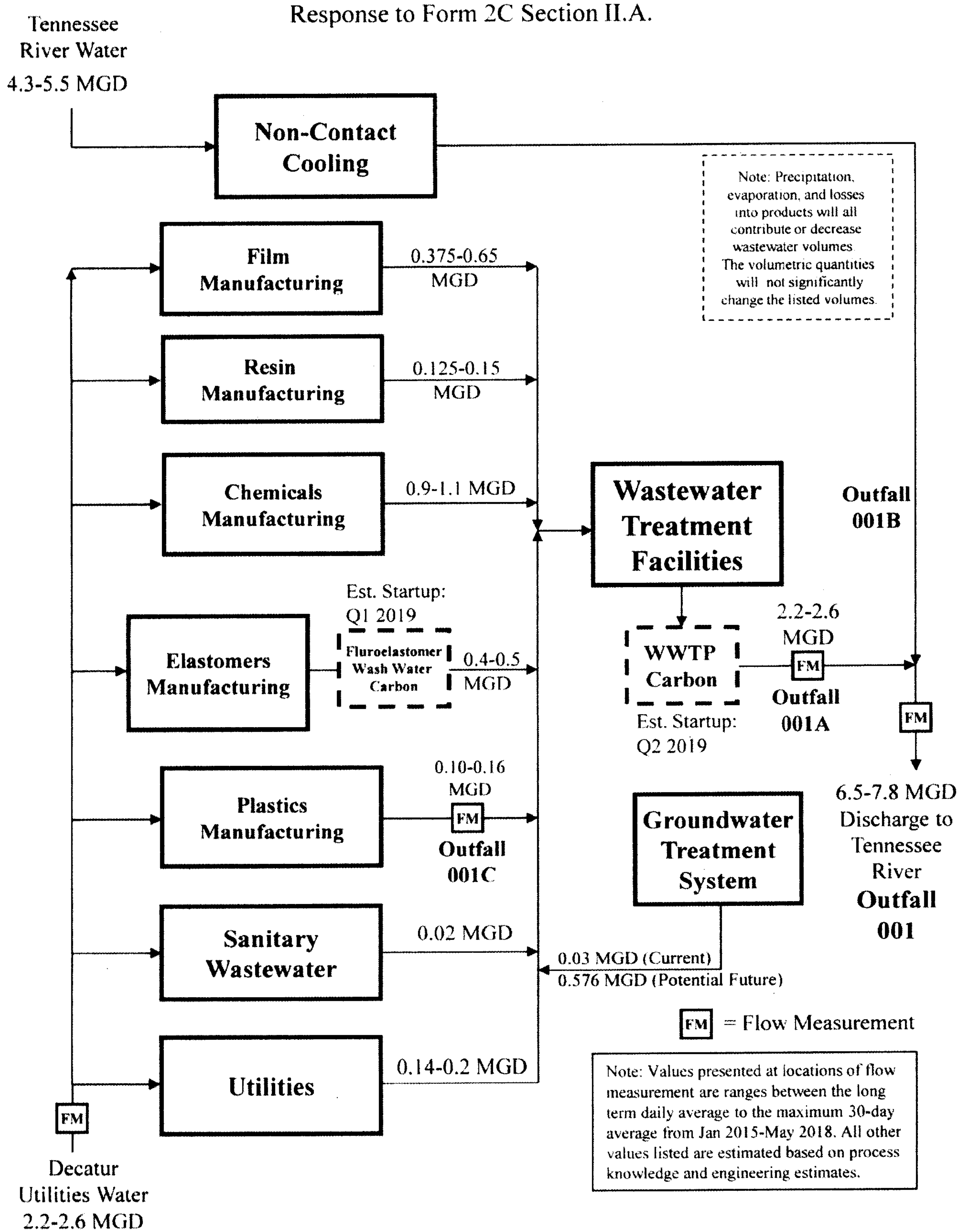
EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
AL0000205	DSN 001

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)															
18P. PCB-1242 (53469-21-9)															
19P. PCB-1254 (11097-69-1)															
20P. PCB-1221 (11104-28-2)															
21P. PCB-1232 (11141-16-5)															
22P. PCB-1248 (12672-29-6)															
23P. PCB-1260 (11096-82-5)															
24P. PCB-1016 (12674-11-2)															
25P. Toxaphene (8001-35-2)															

See Attachment 2C-3

Figure 2C-1: Water Flow Diagram

Response to Form 2C Section II.A.



Attachment 2C-2: Operations Contributing Flow and Treatment Technologies

Response to Form 2C Section II.B.

1. Outfall Number (list)	2. Operations Contributing Flow		3. Treatment	
	a. Operation (list)	b. Average Flow (include units)	a. Description	b. List Codes from Table 2C-1
001	Non -contact cooling water from Outfall 001B and treated process wastewater from Outfall 001A	6.5-7.8 MGD	Discharge to Surface Water	4-A
001A	Wastewater Treatment Facilities	2.2-2.6 MGD	Pre-settling	1-U
			Screening	1-T
			Mixing	1-O
			Neutralization	2-K
			Precipitation	2-C
			Coagulation	2-D
			Flocculation	1-G
			Primary Settling	1-U
			Activated Sludge	3-A
			Secondary Settling	1-U
			Aerobic Digestion	5-A
			Gravity Thickening	5-L
			Pressure Filtration	5-R
			Landfill	5-Q
			Polishing Ponds (Settling)	1-U
			Carbon Adsorption	2-A
			Disinfection (UV)	2-H
	Film Manufacturing	0.375-0.65 MGD	To Wastewater Treatment Facilities	
	Resin Manufacturing	0.125-0.15 MGD	To Wastewater Treatment Facilities	
	Specialty Chemicals Manufacturing	0.9-1.1 MGD	To Wastewater Treatment Facilities	
	Elastomers Manufacturing	0.4-0.5 MGD	Carbon Adsorption	2-A
	Outfall 001C	0.10-0.16 MGD	To Wastewater Treatment Facilities	
	Groundwater Treatment	0.03 MGD	Gas-Phase Separation	1-K
	Sanitary Wastewater	0.02 MGD	To Wastewater Treatment Facilities	
	Utilities	0.14-0.2 MGD	To Wastewater Treatment Facilities	
001B	Non-contact cooling water	4.3-5.5 MGD	To Outfall 001	
001C	Plastics Manufacturing	0.10-0.16 MGD	Neutralization	2-K

*See Attachment B for wastewater flow diagram. See Attachment C1 & C2 for wastewater treatment descriptions

Attachment 2C-2: Narrative Description of Wastewater Treatment Facilities

The descriptions provided in this attachment are intended to augment the information that is requested in Section II.B. of Form 2C. Provided in this section is a general description of the wastewater treatment and pretreatment facilities.

A. Pretreatment Systems

Wastewaters from different areas of the facility are pretreated prior to discharge into the site's main wastewater treatment facilities.

1. Groundwater Treatment System, Site Remediation, and other activities

A dedicated pretreatment system is used for the treatment of wastewaters that are generated in site remediation activities including a groundwater pump-out system. The system includes an equalization tank, clarifier, bag filters, an air stripper with vapor phase carbon adsorption, and granular activated carbon. The design flowrate of this system is approximately 50 gpm. 3M has plans to increase the design flowrate to 170 gpm later in 2018. Wastewaters may be treated using only granular activated carbon. This system discharges into the equalization tanks.

2. Process Steam Stripper

Process wastewaters from Chemicals and Resin Manufacturing that are contaminated with solvents are first treated in a process steam stripper. Most of these wastewaters are conveyed through a dedicated sewer system to the steam stripper process, while some are containerized and conveyed to the system in batches. This system uses process steam to remove volatile organic chemicals from these wastewaters which are subsequently recovered in a condenser and shipped off-site for disposal. The system includes a decanter, two 20,000 gallon storage/feed tanks, a distillation column, and a condenser. The maximum feed rate for the system is 20 gpm. Wastewaters may also be stored in portable storage tanks during system shutdowns and maintenance. The discharge from the process steam stripper is mixed with other wastewaters and conveyed to the main wastewater treatment facilities.

3. In-Process Treatment

Process wastewaters may be treated in production vessels using several methods. This may include neutralization, liquid/liquid ion exchange, and activated carbon adsorption. Wastewaters that are generated in Plastics Manufacturing may be neutralized prior to discharge (through Outfall 001C) into the main wastewater treatment operations.

4. Fluoroelastomer Wash Water Carbon Treatment

Per previous notifications submitted to ADEM, 3M is currently constructing a new pretreatment process that will provide treatment to reduce Soluble Organic Fluorine (SOF) compounds in wastewater generated by Elastomers Manufacturing. Wash water generated by the Elastomers operations will be pumped to an existing equalization tank. The equalized flow will then be sent through a new carbon treatment system before being sent to the main wastewater treatment operations. The anticipated startup of this system is the first quarter of 2019.

B. Site Wastewater Treatment Facilities

The main wastewater treatment plant is described in overview below and in further detail in Attachment C2.

1. Presettling Tank

Prior to entering the Chemical Waste Treatment System, each wastewater stream enters a presettling tank which is used to remove large solids which might clog or damage downstream wastewater treatment equipment.

2. Bar Screen Filtration

Wastewater is delivered from the process areas to the treatment plant via three sewer systems. Each sewer is equipped with a vertical slat, automatic cleaning bar screen to further remove solids before the wastewater is pumped to the equalization tanks. This filtration serves to protect the pumps and other downstream equipment in the wastewater treatment.

3. Equalization

Equalization provides the wastewater treatment plant with more uniform hydraulic and pollutant loading. This is accomplished with two separate equalization systems. The main system was designed with two fully mixed approximately 600,000 gallon above ground equalization tanks. The equalization tanks are normally operated in series with the first tank operating full and overflowing to the second tank. The level in the second tank fluctuates to provide hydraulic buffering. In the event of an upstream release of a waste which could be harmful to the activated sludge system, the release can be captured in the first equalization tank while the second tank remains online. A surge tank is also used to capture increases in flow that will be associated with rainfall events. Acid may be added to these tanks for pH control.

4. Chemical Neutralization/Precipitation/Coagulation/Flocculation

Wastewater flows from the equalization tanks to a rapid mix tank where lime is added, resulting in calcium fluoride precipitate and coagulated suspended solids. The wastewater flows into the flocculation tanks where an organic polymer is added to agglomerate the suspended material and assist in its settling.

5. Clarification

   Following flocculation, wastewater flows into primary clarifiers, where settleable solids are removed and pumped into a thickener for further concentration or directly to the plate and frame filter press.

6. Activated Sludge Biological Treatment

   The 3M Decatur WWTP is equipped with two separate activated sludge systems that can operate in parallel or series. The first system consists of two aeration tanks operating in parallel. The second system consists of two Advent® Integrated Systems (AIS) tanks operating in parallel. The AIS system can be operated in parallel with the aeration tanks with the flow proportioned between the two systems or in series with the tanks receiving the effluent of the final clarifiers. The activated sludge process is used to remove biodegradable organic pollutants from the wastewater.

7. Clarification

   Each activated sludge system removes biological sludge in a different manner. In the first system, activated sludge from the aeration tanks is mixed and then split to the two final clarifiers. The biological solids settle in the clarifiers where they are removed and the sludge is recirculated to the head of the aeration tanks. This provides active biomass for the activated sludge process. Excess sludge is pumped into the digester. The AIS tanks contain integral clarifiers in each tank that remove and recirculate the biomass within each tank. Excess sludge is removed from the AIS tanks and is pumped into the digester.

8. Sludge Management

   The 3M WWTP is equipped with a sludge thickener and an aerobic digester. The aerobic digester receives waste activated sludge from the final clarifiers or the AIS tanks. The thickeners receive sludge from the digester and both primary clarifiers.

   The thickeners reduce the volume of the sludge by increasing the percentage of solids in the sludge. Supernatant from the thickener flows back to a lift station at the head of the WWTP.

   The thickened sludge is pumped to a hydraulic sludge press which dewaters the sludge and further increases the solids content of the sludge. The sludge cake is discharged into a dump trailer and disposed in an off-site landfill.

9. Polishing Ponds

   The wastewater flows through a series of two polishing ponds to remove any remaining biomass or settleable solids. The second pond is divided into two cells by a weir. The water leaving the second polishing pond flows through a sampling/measuring station and mixes with the non-contact cooling water before being discharged to Baker's Creek.

10. WWTP Carbon Treatment

Per previous notifications to ADEM, 3M is currently constructing a new carbon treatment system that will reduce the concentrations of many of the pollutants currently analyzed and reported for in the discharge through DSN 001. The proposed carbon treatment system would be installed after the polishing ponds, prior to disinfection. The anticipated startup of this system is the second quarter of 2019.

11. Disinfection

Wastewaters are treated in an Ultraviolet (UV) disinfection system which reduces fecal coliform values to less than those levels required in the NPDES permit. UV disinfection is located prior to mixing with non-contact cooling water and discharge through DSN 001.

Attachment 2C-2: Design Description of Wastewater Treatment System

The descriptions provided in this attachment are intended to augment the information that is requested in Section II.B. of Form 2C. Provided in this section is a summary of the sizes, volumes, capabilities, etc. of the treatment units that are provided in the chemical waste treatment system.

1. System Parameters

a. Design Flow Rate (average): 1400 gpm

2. Control, Electronic Data Logging, and Trend Analysis System

a. Type: Programmable Logic Controller

b. Parameters

1. Influent pH
2. Equalization Tank pH
3. Equalization Tank level
4. Rapid Mix ph
5. Flocculation Tank pH
6. Equalized flow rate
7. Aeration Tank Dissolved Oxygen
8. Activated sludge recycle flow rate
9. Final clarifier effluent pH
10. DSN001 pH and flow rate

3. Surge Tank

a.	Number of Tanks:	1
b.	Tank Dimensions:	90 ft. diameter, 14 ft. height
c.	Water Depth:	11 ft.
d.	Liquid Working Volume:	70,000 ft^3 (523,000 gallons)
e.	Purpose:	Accumulation of excess influent associate with precipitation events

4. pH Adjustment

a.	Reagent:	Lime Slurry
b.	Storage Tank:	30,000 gallons (Shared with N/F Treatment System
c.	Feed Control:	Automated control valve modulates pumped slurry feed
d.	Purpose:	First stage neutralization

5. Presettling Tank

a.	Number of Tanks:	2 (in parallel)
b.	Total Volume:	34,000 gallons
c.	Purpose:	Removal of large solids

6. Influent Lift Pumps, Screw Pumps

a.	Number of Pumps:	2 (in parallel)
b.	Pump Capacity:	1700 gpm per pump
c.	Pump Lift:	12 ft.

7. Screw Lift Pumps to Equalization Tank

a.	Number of pumps:	2 (in parallel)
b.	Pump Capacity:	1700 gpm per pump
c.	Pump Lift:	24.5 ft.

8. Equalization Tanks

a.	Design:	Above ground with sub floor leak detection
b.	Number of Tanks:	2
c.	Tank Dimensions:	69 ft. diameter, 22 ft. height
d.	Water Depth:	20 ft. maximum, 5 ft. minimum
e.	Liquid Working Volume:	82,264 ft^3 (614,000 gallons) per cell
f.	Mixing:	One 15 HP turbine mixer per tank
g.	Maximum Hydraulic Detention Time:	15.7 hours total at design flow rate

9. pH adjustment

a.	Reagent	Sulfuric acid
b.	Plant sulfuric acid storage tank	
c.	Acid feed	Automated control valve modulates acid feed
d.	Purpose	pH reduction

10. pH Adjustment

a.	Reagent:	Lime Slurry
b.	Lime Slurry Storage:	50,000 gallons (Shared with N/F Treatment System)
c.	Lime Feed:	Automated control valve modulates pumped slurry feed
d.	Purpose:	Precipitation, coagulation, neutralization

11. Rapid Mix Tank

a.	Number of Tanks:	1
b.	Dimensions:	12 ft. x 12 ft. x 13.5 ft. height
c.	Water Depth:	12 ft.
d.	Liquid Volume:	13,000 gallons
e.	Mixer:	7.5 hp
f.	Detention time:	9.3 minutes

12. Flocculation Tanks

a.	Number of cells:	2
b.	Cell dimensions:	12 ft. x 12 ft. x 13.5 ft. height
c.	Water Depth:	12 ft.
d.	Liquid Volume:	13,000 gallons per cell
e.	Mixer:	2 mixers, 3 hp each
f.	Detention Time:	18.6 minutes

13. Flocculant Feed for Primary Clarifier

a.	Coagulant:	Organic wastewater treatment polymer
b.	Storage Tank:	3,000 gallons
c.	Feed System:	Variable Speed Pump

14. Primary Clarifier

a.	Number of Tanks:	2 (in parallel)
b.	Tank Diameter:	60 ft. & 50 ft.
c.	Sidewall Depth:	9 ft.
d.	Volume:	25,446 ft^3 (190,300 gal) & 17,665 ft^3 (132,100 gal)
e.	Surface Area:	2,830 ft^2
f.	Surface Setting Rate:	712 gpd/ft^2
g.	Detention Time:	2.3 hours
h.	Floor Loading:	14.1 lbs. per day/ ft^2 (40,000 lbs/day)

15. Primary Sludge Pumps

a.	Number of Pumps:	2 (spare pump shared with Nickel/Fluoride system)
b.	Capacity:	350 gpm @ 30 ft. head
c.	Horsepower Rating:	5 hp

16. Aeration Tanks (Original)

a.	Number of Tanks:	2
b.	Dimensions:	146 ft. x 26 ft. x 19 ft. height
c.	Water Depth:	15 ft.

d.	Liquid Volume:	115,000 ft^3 (860,000 gallons)
e.	Organic Load:	11,500 lbs/day
f.	Tank Unit Load:	101 ppd per 1,000 ft^3
g.	Detention Time:	10.2 hours
h.	Air Required:	10,000 cfm
i.	MLSS:	7,000 mg/L

17. Aeration Blowers

a.	Number of Blowers:	4
b.	Capacity:	3 @ 4000 cfm 1 @ 2400 cfm
c.	Horsepower Rating:	3 @ 200 hp

18. AIS Tanks

a.	Number of Tanks:	2
b.	Volume (total):	1,770,000 gal
c.	Hydraulic Retention Time:	16.8 hrs
d.	MLSS	8,200 mg/l
e.	Oxygen Requirement	13,622 lbs/day
f.	F/M	0.14
g.	Blowers:	3 @ 4,000 CFM
h.	Water Depth:	27 ft

19. AIS Tanks pH control

a.	Reagent	Magnesium hydroxide
b.	Volume	
c.	Control	pH probe

20. Nutrient Feed for Aeration Tanks

a.	Nutrient:	Phosphoric Acid
	Storage:	7,000 gallons (Existing Tank)
	Feed System:	Gravity Feed
b.	Nutrient:	Dry Urea
	Storage:	Bags
	Feed System:	Manual

21. Final Clarifiers

a.	Number of Tanks	2
b.	Tank Diameter:	75 ft.
c.	Sidewall Depth:	12 ft.
d.	Volume:	35,342 ft^3 (264,000 gallons)
e.	Surface Area:	4,418 ft^2 per tank
f.	Surface Settling Rate:	228 gpd/ft^2

g. Detention Time: 6.3 hours
h. Floor Loading: 37.1 lbs. per day/ft^2 (328,000 lbs. per day)

22. Return Sludge Pumps

a. Number of Pumps: 2
b. Capacity: 1100 gpm @ 30 ft. head
c. Horsepower Rating: 20 hp

23. Aerobic Digester Basin for Wasted Activated Sludge

a. Number of Tanks: 1
b. Dimensions: 146 ft. x 22 ft. x 19 ft. height
c. Water Depth: 15 ft.
d. Liquid Volume: 360,000 gallons
e. Detention Time: 15 days
f. Air Required: 600 lbs. oxygen per day, 725 cfm mixing requirement
g. Sludge Transfer Pump: 5 hp, 100 gpm @60 ft. height

24. Sludge Dewatering

a. Number of units: 1
b. Type: Plate and Frame Dewatering Press
c. Capacity: 225 cf per cycle
d. Operating Pressure: 100 psi
e. Solids Processing Capacity: 18 tons per day (dry solids) on one 8-hour shift

25. Sludge Storage Basins

a. Number: 2
b. Volume: Approx. 3 MM gallons and 1 MM gallons

26. Polishing Pond #1

a. Volume: 2,200,000 gallons
b. Depth: 8 ft.
c. Retention Time: 24 hours

27. Polishing Pond #2

a. <u>First Cell</u>
   1. Volume: 1,700,000 gallons
   2. Depth: 8 ft
   3. Retention Time: 19 hours
b. <u>Second Cell</u>
   1. Volume: 900,000 gallons
   2. Depth: 8 ft

3. Retention Time: 9 hours

28. Granular Activated Carbon System (Anticipated Startup in Quarter 2, 2019)

a.	Number of Tanks	22 (11 Pair)
b.	Tank Diameter:	10 ft.
c.	Tank Height:	23 ft.
d.	Tank Type:	Calgon Carbon Corporation Model 10 Vessels
e.	Tank Capacity:	20,000 lbs. of carbon per tank
f.	Carbon Contact Time:	20 minutes (at maximum design capacity)
g.	Design Flow:	2.14 MGD – 2.65 MGD (future)
h.	Maximum Design Capacity	3.4 MGD

29. Ultraviolet Light Disinfection

a.	Current Design Flow:	2.14 MGD – 2.65 MGD (future)
b.	Design Capability:	4.8 MGD
c.	Total Channels:	2
d.	Channel Dimension:	16'X1.33'X4.5' height
e.	Transmittance:	70% minimum @ 253.7 nm

Attachment 2C-3: Effluent Characteristics
DSN 001

	POLLUTANT	MARK "X"			EFFLUENT							UNITS	
		Testing Required	Believed Present	Believed Absent	Max. Daily Conc.	Max. Daily Mass	Max. 30 Day Conc.	Max. 30 Day Mass	Long Term Avg. Conc.	Long Term Avg. Mass	No. of Analyses	Conc. Units	Mass Units
Part A	Required Parameters												
a.	BOD	X	NA	NA	18	1109			3.11	164	41	mg/L	lb/day
b.	COD	X	NA	NA	16.8	951					1	mg/L	lb/day
c.	TOC	X	NA	NA	2.88	163					1	mg/L	lb/day
d.	TSS	X	NA	NA	30	1849			6.50	350	41	mg/L	lb/day
e.	Ammonia	X	NA	NA	4.9	282			1.00	52	40	mg/L	lb/day
f.	Flow	X	NA	NA	9.4	NA	7.79	NA	6.49	NA	1246	MGD	NA
g.	Temp (winter)*	X	NA	NA							NA		
h.	Temp (summer)*	X	NA	NA	85.8	NA			81.2	NA	12	Deg F	NA
i.	pH	X	NA	NA					6.1-8.5	NA	2486	SU	NA
* Temperature data shown is measured June-Sept as required by the NPDES Permit at the west end of the mixing zone as defined in the 1991 3M Effluent Mixing Zone Study.													
Part B	Testing requirements determined by review of materials usage and storage onsite												
a.	Bromide			X							0		
b.	Chlorine			X							0		
c.	Color	X	X		7.99	452					1	Units	NA
d.	Fecal Coliform			X	0	0					1	col/100 mL	NA
e.	Fluoride	X	X		0.74	42					1	mg/L	lb/day
f.	Nitrate-Nitrite	X	X		5.32	239			1.14	57	41	mg/L	lb/day
g.	Nitrogen, Total Organic			X	19.511	877			4.91	247	41	mg/L	lb/day
h.	O&G	X	X		1.24	73			0.10	4.8	37	mg/L	lb/day
i.	Phosphorus, Total	X	X		3.33	189			0.46	25	41	mg/L	lb/day
j.	Radioactivity	NA	NA	NA									
(1)	Alpha, Total			X							0		
(2)	Beta, Total			X							0		
(3)	Radium, Total			X							0		
(4)	Radium 226			X							0		
k.	Sulfate (as SO4)	X	X		53.7	3041					1	mg/L	lb/day
l.	Sulfide (as S)			X	0	0					1	mg/L	lb/day
m.	Sulfite (as SO3)	X	X		0	0					1	mg/L	lb/day
n.	Surfactants	X	X		0	0					1	mg/L	lb/day
o.	Aluminum, Total			X							0		
p.	Barium, Total	X	X		0.0214	1.21					1	mg/L	lb/day
q.	Boron, Total			X							0		
r.	Cobalt, Total	X	X		0	0					1	mg/L	lb/day
s.	Iron, Total	X	X		0	0					1	mg/L	lb/day
t.	Magnesium, Total	X	X		0	0					1	mg/L	lb/day
u.	Molybdenum, Total	X	X		0	0					1	mg/L	lb/day
v.	Manganese, Total	X	X		0.0326	1.85					1	mg/L	lb/day
w.	Tin, Total	X	X		0	0					1	mg/L	lb/day
x.	Titanium, Total			X							0		

Long-term averages not calculated if only one result is reported.
30-day values not calculated for pollutants monitored on a monthly or less frequent basis.
Concentration and mass values of "0" indicate results below detection limit.

Attachment 2C-3: Effluent Characteristics

DSN 001

	POLLUTANT	MARK "X" Testing Required	MARK "X" Believed Present	MARK "X" Believed Absent	EFFLUENT Max. Daily Conc.	EFFLUENT Max. Daily Mass	EFFLUENT Max. 30 Day Conc.	EFFLUENT Max. 30 Day Mass	EFFLUENT Long Term Avg. Conc.	EFFLUENT Long Term Avg. Mass	EFFLUENT No. of Analyses	UNITS Conc. Units	UNITS Mass Units
Part C	Testing requirements determined by Table 2C-2 and review of materials usage and storage - "Plastic and synthetic materials manufacturing" Industry Category applies												
METALS, CYANIDE, AND TOTAL PHENOLS													
1M.	Antimony, Total	X	X		0	0					1	mg/L	lb/day
2M.	Arsenic, Total	X	X		0	0					1	mg/L	lb/day
3M.	Beryllium, Total			X							0		
4M.	Cadmium, Total			X	0	0					1	mg/L	lb/day
5M.	Chromium, Total			X	0	0					1	mg/L	lb/day
6M.	Copper, Total	X	X		0.00359	0.203					1	mg/L	lb/day
7M.	Lead, Total	X	X		0	0					1	mg/L	lb/day
8M.	Mercury, Total	X	X		0	0					1	mg/L	lb/day
9M.	Nickel, Total			X	0	0					1	mg/L	lb/day
10M.	Selenium, Total			X							0		
11M.	Silver, Total			X							0		
12M.	Thallium, Total			X							0		
13M.	Zinc, Total	X	X		0	0					1	mg/L	lb/day
14M.	Cyanide, Total			X							0		
15M.	Phenols, Total	X	X		0	0					1	mg/L	lb/day
DIOXIN													
	2,3,7,8-Tetrachlorodibenzo-P-Dioxin			X							0		
GC/MS FRACTION – VOLATILE COMPOUNDS													
1V.	Acrolein	X		X	0	0					1	mg/L	lb/day
2V.	Acrylonitrile	X		X	0	0					1	mg/L	lb/day
3V.	Benzene	X		X	0	0					1	mg/L	lb/day
4V.	Bis (Chloromethyl) Ether	X		X	0	0					1	mg/L	lb/day
5V.	Bromoform	X		X	0	0					1	mg/L	lb/day
6V.	Carbon Tetrachloride	X		X	0	0					1	mg/L	lb/day
7V.	Chlorobenzene	X		X	0	0					1	mg/L	lb/day
8V.	Chlorodibromomethane	X		X	0	0					1	mg/L	lb/day
9V.	Chloroethane	X		X	0	0					1	mg/L	lb/day
10V.	2-Chloroethylvinyl Ether	X		X	0	0					1	mg/L	lb/day
11V.	Chloroform	X		X	0	0					1	mg/L	lb/day
12V.	Dichlorobromomethane	X		X	0	0					1	mg/L	lb/day
13V.	Dichlorodifluoromethane	X		X	0	0					1	mg/L	lb/day
14V.	1,1-Dichloroethane	X		X	0	0					1	mg/L	lb/day
15V.	1,2-Dichloroethane	X	X		0	0					1	mg/L	lb/day
16V.	1,1-Dichloroethylene	X	X		0	0					1	mg/L	lb/day
17V.	1,2-Dichloropropane	X		X	0	0					1	mg/L	lb/day
18V.	1,3-Dichloropropylene	X		X	0	0					1	mg/L	lb/day
19V.	Ethylbenzene	X	X		0	0					1	mg/L	lb/day
20V.	Methyl Bromide	X		X	0	0					1	mg/L	lb/day
21V.	Methyl Chloride	X		X	0	0					1	mg/L	lb/day
22V.	Methylene Chloride	X		X	0	0					1	mg/L	lb/day
23V.	1,1,2,2-Tetrachloroethane	X		X	0	0					1	mg/L	lb/day
24V.	Tetrachloroethylene	X		X	0	0					1	mg/L	lb/day
25V.	Toluene	X	X		0	0					1	mg/L	lb/day

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Concentration and mass values of "0" indicate results below detection limit

Attachment 2C-3: Effluent Characteristics
DSN 001

	POLLUTANT	MARK "X"			EFFLUENT							UNITS	
		Testing Required	Believed Present	Believed Absent	Max. Daily Conc.	Max. Daily Mass	Max. 30 Day Conc.	Max. 30 Day Mass	Long Term Avg. Conc.	Long Term Avg. Mass	No. of Analyses	Conc. Units	Mass Units
26V.	1,2-Trans-Dichloroethylene	X		X	0	0					1	mg/L	lb/day
27V.	1,1,1-Trichloroethane	X		X	0	0					1	mg/L	lb/day
28V.	1,1,2-Trichloroethane	X		X	0	0					1	mg/L	lb/day
29V.	Trichloroethylene	X		X	0	0					1	mg/L	lb/day
30V.	Trichlorofluoromethane	X		X	0	0					1	mg/L	lb/day
31V.	Vinyl Chloride	X		X	0	0					1	mg/L	lb/day
GC/MS FRACTION – ACID COMPOUNDS													
1A.	2-Chlorophenol	X		X	0	0					1	mg/L	lb/day
2A.	2,4-Dichlorophenol	X		X	0	0					1	mg/L	lb/day
3A.	2,4-Dimethylphenol	X		X	0	0					1	mg/L	lb/day
4A.	4,6-Dinitro-O-Cresol	X		X	0	0					1	mg/L	lb/day
5A.	2,4-Dinitrophenol	X		X	0	0					1	mg/L	lb/day
6A.	2-Nitrophenol	X		X	0	0					1	mg/L	lb/day
7A.	4-Nitrophenol	X		X	0	0					1	mg/L	lb/day
8A.	P-Chloro-M-Cresol	X		X	0	0					1	mg/L	lb/day
9A.	Pentachlorophenol	X		X	0	0					1	mg/L	lb/day
10A.	Phenol	X	X		0	0					1	mg/L	lb/day
11A.	2,4,6-Trichlorophenol	X		X	0	0					1	mg/L	lb/day
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS													
1B.	Acenaphthene	X		X	0	0					1	mg/L	lb/day
2B.	Acenaphtylene	X		X	0	0					1	mg/L	lb/day
3B.	Anthracene	X		X	0	0					1	mg/L	lb/day
4B.	Benzidine	X		X	0	0					1	mg/L	lb/day
5B.	Benzo (a) Anthracene	X		X	0	0					1	mg/L	lb/day
6B.	Benzo (a) Pyrene	X		X	0	0					1	mg/L	lb/day
7B.	3,4-Benzofluoranthene	X		X	0	0					1	mg/L	lb/day
8B.	Benzo (ghi) Perylene	X		X	0	0					1	mg/L	lb/day
9B.	Benzo (k) Fluoranthene	X		X	0	0					1	mg/L	lb/day
10B.	Bis (2-Chloroethoxy) Methane	X		X	0	0					1	mg/L	lb/day
11B.	Bis (2-Chloroethyl) Ether	X		X	0	0					1	mg/L	lb/day
12B.	Bis (2-Chloroisopropyl) Ether	X		X	0	0					1	mg/L	lb/day
13B.	Bis (2-Ethylhexyl) Phthalate	X		X	0	0					1	mg/L	lb/day
14B.	4-Bromophenyl Phenyl Ether	X		X	0	0					1	mg/L	lb/day
15B.	Butyl Benzyl Phthalate	X		X	0	0					1	mg/L	lb/day
16B.	2-Chloronaphthalene	X		X	0	0					1	mg/L	lb/day
17B.	4-Chlorophenyl Phenyl Ether	X		X	0	0					1	mg/L	lb/day
18B.	Chrysene	X		X	0	0					1	mg/L	lb/day
19B.	Dibenzo (a,h) Anthracene	X		X	0	0					1	mg/L	lb/day
20B.	1,2-Dichlorobenzene	X		X	0	0					1	mg/L	lb/day
21B.	1,3-Dichlorobenzene	X		X	0	0					1	mg/L	lb/day
22B.	1,4-Dichlorobenzene	X		X	0	0					1	mg/L	lb/day
23B.	3,3-Dichlorobenzidine	X		X	0	0					1	mg/L	lb/day
24B.	Diethyl Phthalate	X		X	0	0					1	mg/L	lb/day
25B.	Dimethyl Phthalate	X		X	0	0					1	mg/L	lb/day
26B.	Di-N-Butyl Phthalate	X		X	0	0					1	mg/L	lb/day

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Concentration and mass values of "0" indicate results below detection limit.

Attachment 2C-3: Effluent Characteristics
DSN 001

	POLLUTANT	MARK "X"			EFFLUENT							UNITS	
		Testing Required	Believed Present	Believed Absent	Max. Daily Conc.	Max. Daily Mass	Max. 30 Day Conc.	Max. 30 Day Mass	Long Term Avg. Conc.	Long Term Avg. Mass	No. of Analyses	Conc. Units	Mass Units
27B.	2,4-Dinitrotoluene	X		X	0	0					1	mg/L	lb/day
28B.	2,6-Dinitrotoluene	X		X	0	0					1	mg/L	lb/day
29B.	Di-N-Octyl Phthalate	X		X	0	0					1	mg/L	lb/day
30B.	1,2-Diphenylhydrazine (as Azo-benzene)	X		X	0	0					1	mg/L	lb/day
31B.	Fluoranthene	X		X	0	0					1	mg/L	lb/day
32B.	Fluorene	X		X	0	0					1	mg/L	lb/day
33B.	Hexachlorobenzene	X		X	0	0					1	mg/L	lb/day
34B.	Hexachlorobutadiene	X		X	0	0					1	mg/L	lb/day
35B.	Hexachlorocyclopentadiene	X		X	0	0					1	mg/L	lb/day
36B.	Hexachloroethane	X		X	0	0					1	mg/L	lb/day
37B.	Indeno (1,2,3-cd) Pyrene	X		X	0	0					1	mg/L	lb/day
38B.	Isophorone	X		X	0	0					1	mg/L	lb/day
39B.	Napthalene	X		X	0	0					1	mg/L	lb/day
40B.	Nitrobenzene	X		X	0	0					1	mg/L	lb/day
41B.	N-Nitrosodimethylamine	X		X	0	0					1	mg/L	lb/day
42B.	N-Nitrosodi-N-Propylamine	X		X	0	0					1	mg/L	lb/day
43B.	N-Nitrosodiphenylamine	X		X	0	0					1	mg/L	lb/day
44B.	Phenanthrene	X		X	0	0					1	mg/L	lb/day
45B.	Pyrene	X		X	0	0					1	mg/L	lb/day
46B.	1,2,4-Trichlorobenzene	X		X	0	0					1	mg/L	lb/day
GC/MS FRACTION – PESTICIDES													
1P.	Aldrin	X		X	0	0					1	mg/L	lb/day
2P.	Alpha-BHC	X		X	0	0					1	mg/L	lb/day
3P.	Beta-BHC	X		X	0	0					1	mg/L	lb/day
4P.	Gamma-BHC	X		X	0	0					1	mg/L	lb/day
5P.	Delta-BHC	X		X	0	0					1	mg/L	lb/day
6P.	Chlordane	X		X	0	0					1	mg/L	lb/day
7P.	4,4'-DDT	X		X	0	0					1	mg/L	lb/day
8P.	4,4'-DDE	X		X	0	0					1	mg/L	lb/day
9P.	4,4'-DDD	X		X	0	0					1	mg/L	lb/day
10P.	Dieldrin	X		X	0	0					1	mg/L	lb/day
11P.	Alpha-Endosulfan	X		X	0	0					1	mg/L	lb/day
12P.	Beta-Endosulfan	X		X	0	0					1	mg/L	lb/day
13P.	Endosulfan Sulfate	X		X	0	0					1	mg/L	lb/day
14P.	Endrin	X		X	0	0					1	mg/L	lb/day
15P.	Endrin Aldehyde	X		X	0	0					1	mg/L	lb/day
16P.	Heptachlor	X		X	0	0					1	mg/L	lb/day
17P.	Heptachlor Epoxide	X		X	0	0					1	mg/L	lb/day
18P.	PCB-1242	X		X	0	0					1	mg/L	lb/day
19P.	PCB-1254	X		X	0	0					1	mg/L	lb/day
20P.	PCB-1221	X		X	0	0					1	mg/L	lb/day
21P.	PCB-1232	X		X	0	0					1	mg/L	lb/day
22P.	PCB-1248	X		X	0	0					1	mg/L	lb/day
23P.	PCB-1260	X		X	0	0					1	mg/L	lb/day
24P.	PCB-1016	X		X	0	0					1	mg/L	lb/day
25P.	Toxaphene	X		X	0	0					1	mg/L	lb/day

Long-term averages not calculated if only one result is reported.
30-day values not calculated for pollutants monitored on a monthly or less frequent basis.
Concentration and mass values of "0" indicate results below detection limit

Attachment 2C-3: Effluent Characteristics
DSN 001

POLLUTANT	MARK "X" Testing Required	Believed Present	Believed Absent	EFFLUENT Max. Daily Conc.	Max. Daily Mass	Max. 30 Day Conc.	Max. 30 Day Mass	Long Term Avg. Conc.	Long Term Avg. Mass	No. of Analyses	UNITS Conc. Units	Mass Units
Permit required sampling for poly- and perfluoroalkyl substances (PFAS)												
Perfluorobutanoic Acid (PFBA)	See Attachment 2C-4											
Perfluoroheptanoic Acid (PFHpA)												
Perfluorohexanoic Acid (PFHxA)												
Perfluoroctanoic Acid (PFOA)												
Perfluorobutanesulfonate (PFBS)												
Perfluorohexanesulfonate (PFHS)												
Perfluorooctanesulfonate (PFOS)												
Perfluorobutanesulfonamide (PFBSA)												
Perfluorooctanesulfonamide (PFOSA)												
2-(N-methyl-PFOSA) acetic acid												
2-(N-ethyl-PFOSA) acetic acid												
Part D **Required to be reported if present, determined by review of Table 2C-3 and materials usage and storage onsite (testing not required)**												
Acetaldehyde	NA	X		0.00956	0.541					1	mg/L	lb/day
Allyl alchohol	NA		X							0		
Allyl chloride	NA		X							0		
Amyl acetate	NA		X							0		
Aniline	NA		X							0		
Benzonitrile	NA		X							0		
Benzyl chloride	NA	X		0	0					1	mg/L	lb/day
Butyl acetate	NA		X							0		
Butylamine	NA		X							0		
Captan	NA		X							0		
Carabaryl	NA		X							0		
Carbofuran	NA		X							0		
Carbon disulfide	NA		X							0		
Chlorpyrifos	NA		X							0		
Coumaphos	NA		X							0		
Cresol	NA		X							0		
Crotonaldehyde	NA		X							0		
Cyclohexane	NA	X								0		
2,4-D (2,4-Dichlorophenoxyacetic acid)	NA		X							0		
Diazinon	NA		X							0		
Dicamba	NA		X							0		
Dichlobenil	NA		X							0		
Dichlone	NA		X							0		
2,2-Dichloropropionic acid	NA		X							0		
Dichlorovos	NA		X							0		
Diethyl amine	NA		X							0		
Dimethyl amine	NA		X							0		
Dinitrobenzene	NA		X							0		
Diquat	NA		X							0		
Disulfoton	NA		X							0		
Diuron	NA		X							0		
Epichlorohydrin	NA		X							0		

Long-term averages not calculated if only one result is reported.
30-day values not calculated for pollutants monitored on a monthly or less frequent basis.
Concentration and mass values of "0" indicate results below detection limit.

Attachment 2C-3: Effluent Characteristics

DSN 001

POLLUTANT	MARK "X"			EFFLUENT							UNITS	
	Testing Required	Believed Present	Believed Absent	Max. Daily Conc.	Max. Daily Mass	Max. 30 Day Conc.	Max. 30 Day Mass	Long Term Avg. Conc.	Long Term Avg. Mass	No. of Analyses	Conc. Units	Mass Units
Ethion	NA		X							0		
Ethylene diamine	NA	X								0		
Ethylene dibromide	NA		X							0		
Formaldehyde	NA	X		0	0					1	mg/L	lb/day
Furfural	NA		X							0		
Guthion	NA		X							0		
Isoprene	NA		X							0		
Isopropanolamine	NA		X							0		
Kelthane	NA		X							0		
Kepone	NA		X							0		
Malathion	NA		X							0		
Mercaptodimethur	NA		X							0		
Methoxychlor	NA		X	0	0					1	mg/L	lb/day
Methyl mercaptan	NA		X							0		
Methyl methacrylate	NA	X								0		
Methyl parathion	NA		X							0		
Mevinphos	NA		X							0		
Mexacarbate	NA		X							0		
Monoethyl amine	NA		X							0		
Monomethyl amine	NA	X								0		
Naled	NA		X							0		
Napthenic acid	NA		X							0		
Nitrotoluene	NA		X							0		
Parathion	NA		X							0		
Phenolsulfonate	NA	X								0		
Phosgene	NA	X		0	0					1	mg/L	lb/day
Propargite	NA		X							0		
Propylene oxide	NA		X							0		
Pyrethrins	NA		X							0		
Quinoline	NA		X							0		
Resorcinol	NA		X							0		
Strontium	NA		X							0		
Styrene	NA	X								0		
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	NA		X							0		
TDE (Tetrachlorodiphenyl ethane)	NA		X							0		
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]	NA		X							0		
Trichlorofon	NA		X							0		
Triethanolamine	NA		X							0		
Triethylamine	NA	X		0	0					1	mg/L	lb/day
Trimethylamine	NA		X							0		
Uranium	NA		X							0		
Vanadium	NA		X							0		
Vinyl acetate	NA	X								0		
Xylene	NA	X								0		
Xylenol	NA		X							0		
Zirconium	NA		X							0		

Long term averages not calculated if only one result is reported.
30-day values not calculated for pollutants monitored on a monthly or less frequent basis.
Concentration and mass values of "0" indicate results below detection limit

ATTACHMENT 2C-4

EFFLUENT CHARACTERIZATION - PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS)

A. PFAS MONITORING SUMMARY

The current permit requires quarterly monitoring for the following eleven perfluoroalkyl substances at outfalls DSN001Q-DSN012Q.

Compound Name	Acronym	Size	CAS
N-ethyl perfluorooctanesulfonamidoacetic acid*	N-EtFOSAA	C8	2991-50-6
N-methyl perfluorooctanesulfonamidoacetic acid*	N-MeFOSAA	C8	2355-31-9
Perfluorobutanoic acid	PFBA	C4	375-22-4
Perfluorobutanesulfonic acid	PFBS	C4	375-73-5
Perfluorobutane sulfonamide	PFBSA	C4	30334-69-1
Perfluoroheptanoic acid*	PFHpA	C7	375-85-9
Perfluorohexanoic acid*	PFHxA	C6	307-24-4
Perfluorohexanesulfonic acid*	PFHxS	C6	355-46-4
Perfluorooctanoic acid*	PFOA	C8	335-67-1
Perfluorooctanesulfonic acid*	PFOS	C8	1763-23-1
Perfluorooctanesulfonamide*	PFOSA	C8	754-91-6

*Chemicals associated with former production activities phased out by 2002

The attached Table 1 summarizes the results of the quarterly monitoring from the first quarter 2015 through the first quarter 2018.

B. PFAS ASSOCIATED WITH CURRENT PRODUCTION OPERATIONS

Current manufacturing operations at the Decatur facility that are expected to produce wastewater containing perfluoroalkyl and polyfluoroalkyl substances (PFAS) are as follows:

1. Plastics Manufacturing

   [redacted]

2. Fluoroelastomer production
3. Curatives production, a specialty chemical
4. Perfluorobutane sulfonyl fluoride-based (PBSF) production, also known collectively as "C4 Production"

[redacted]

- PBSF-based curatives production

Like most of the processes in the non-Film Manufacturing operations at Decatur, the plant's PFAS operations are primarily batch processes. The nature of batch chemical processing means that any wastewater discharges occur only intermittently. Further, as demand and production levels vary across the entire Decatur plant, the mass and concentration in the plant's effluent of PFAS and other constituents will vary.

The production processes outlined above are associated with the manufacturing operations previously described in Attachment A of this NPDES permit application. The Film Manufacturing and Resin manufacturing operations are not currently believed to generate or contribute any PFAS to the effluent discharge water.

Each of the above processes that has potential PFAS contributions to wastewater discharging to the chemical sewer, and ultimately from outfall DSN001, is described in more detail below. These wastewaters are not expected to discharge through any other permitted outfalls (i.e., the storm water outfalls). As discussed below, wastewater from primary amide production is subject to a TSCA zero discharge consent order and is not discharged to the chemical sewer.

As information currently allows, specific PFAS chemical identities are provided. When specific chemical identities are uncertain, chemical families associated with these processes are provided.

1. Plastics Manufacturing

[redacted]

[redacted]

The wash water from PVDF resin production is discharged to a sump where it may mix with wastewater from [redacted] monomer production. From there, the wastewater flows to the Site's Wastewater Treatment system. Like the monomer production, resin production wastewater can contain VDF oligomers, a C3 carboxylate and perfluoropropionic acid.

2. Fluoroelastomer production

Elastomer manufacturing includes the production of fluoroelastomers using [redacted] reactions.

[redacted]

[redacted] The environmental stewardship for 3M Decatur's manufacturing operations includes ongoing efforts to identify sources of chemical discharges and reduce, treat or eliminate them, where feasible. This includes those from fluorochemical production. This stewardship activity identified the fluoroelastomer wash water as a source that could be reduced through treatment.

As part of the resulting fluoroelastomer wash water source reduction project, the feasibility of treating this wastewater stream with granular activated carbon (GAC) was evaluated both in the laboratory and at a pilot-scale facility. Analytical characterization was conducted on the untreated wash water stream, as well as on the carbon treated water. The data report for the project is enclosed with this NPDES permit application. (See Attachment 2C-5). [redacted] As a result, 3M decided to install a GAC system to treat and remove PFAS from the elastomer wash water before discharge to the chemical sewer. This project is anticipated to be operational in the second quarter of 2019.

3. Curatives production

The Decatur plant also manufactures, uses, and sells curatives. [redacted] Wastewater from these activities is discharged to the chemical sewer.

[redacted]

[redacted] Because the curatives have generally poor water solubility and the production volumes are limited, curative production is not expected to be a significant PFAS source.

4. Perfluorobutane sulfonyl fluoride-based production

Perfluorobutane sulfonyl fluoride (PBSF)-based production, also referred to as C-4 based production, includes a variety of production activities, [redacted]

PBSF-based production wastewater may contain PFAS. [redacted] All water streams from primary amide production are captured, drummed and sent offsite for disposal.

2. Planned wastewater treatment outlet granular activated carbon treatment system

In addition to the fluoroelastomer wash water pre-treatment GAC system noted above, 3M will install a second granular activated carbon treatment system, with this one installed on the wastewater treatment plant outlet. This system is planned to be operational in 2019.

[redacted]

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 001

ng/mL	2/10/2015	4/20/15	8/13/15	10/21/15	2/19/16	5/19/16	9/11/16	12/9/16	3/6/17	5/11/17	8/7/17	10/18/17	3/10/18
PFBA	1.31	3.59	3.35	2.37	1.63	1.61	4.35	2.4	5.17	2.81	4.03	0.969	1.52
PFHpA	0.69	1.85	8.89	1.01	1.13	0.482	0.534	2.42	0.714	0.473	1.16	0.677	0.536
PFHxA	1.39	1.08	0.673	0.494	0.739	0.185	0.241	1.58	0.414	0.252	0.696	0.332	0.335
PFOA	2.74	5.17	2.47	2.58	3.25	0.609	0.787	7.08	1.64	0.932	2.52	1.30	1.50
PFBS	4.63	12.5	7.46	11.6	6.38	6.35	7.52	9.1	10.1	7.43	47.8	1.72	7.24
PFHS	0.826	1.86	0.528	0.791	0.826	0.254	0.266	1.72	0.654	0.442	2.13	0.563	0.45
PFOS	17.5	14.8	7.93	6.87	5.32	1.74	1.87	14.8	5.02	5.29	8.23	3.97	4.10
FBSA	78.1	87.4	180	114	216	207	285	75.8	193	352	92.3	45.0	71.2
PFOSA	2.52	4.02	1.69	0.847	0.480	1.38	0.950	3.18	0.923	0.969	0.539	0.623	0.890
NMeFOSAA	1.48	2.12	1.42	1.16	0.399	0.432	0.351	1.20	0.648	0.737	1.38	0.856	0.468
NEtFOSAA	2.06	2.11	1.21	0.789	0.444	0.402	0.428	1.28	0.711	0.537	1.05	0.647	0.427

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 002

ng/mL	2/1/2015	5/16/15	7/29/15	10/26/15	2/2/16	5/12/16	8/18/16	11/30/16	3/7/17	4/30/17	7/28/17	10/8/17	3/10/18
PFBA	0.0293	0.0567	0.130	0.0429	0.0570	3.7900	0.0822	0.0791	<0.100	<0.0500	0.1980	0.176	2.94
PFHxA	0.0507	0.0340	0.0915	0.0331	0.0523	0.563	<0.0250	<0.0250	<0.0250	<0.0250	<0.0500	<0.0500	6.94
PFHpA	<0.0250	0.0260	0.0868	<0.0250	<0.0500	0.659	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0500	13.7
PFOA	<0.0480	0.189	0.226	0.203	0.0978	4.47	0.099	0.035	<0.0240	<0.0240	0.0267	0.0307	56.4
PFBS	0.0612	0.111	0.166	0.0616	0.0862	2.62	0.0542	0.147	<0.0250	0.0692	0.106	0.0635	1.28
PFHS	<0.0250	<0.0250	0.0918	<0.0236	<0.0250	0.76	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	5.62
PFOS	0.0848	0.218	0.359	0.198	0.120	18.5	0.203	0.0989	0.0275	0.0655	0.148	0.104	72.2
FBSA	0.387	0.233	0.274	0.125	0.299	2.63	0.196 *	0.110 *	0.100	0.180	0.108	0.447	0.629
PFOSA	0.133	0.221	0.143	0.0537	0.0785	15.2	0.274	0.0652	0.0402	0.122	0.0351	0.0563	8.34
NMeFOSAA	0.0266	<0.0250	0.0681	<0.0250	<0.0500	6.23	0.0266	<0.0250	<0.0250	<0.0500	<0.0500	<0.0250	3.65
NEtFOSAA	0.0376	0.177	0.0854	0.0382	0.0404	11.7	0.0448	<0.0250	<0.0250	<0.0250	<0.0250	<0.0500	4.16

* Qualitative result due to non-compliant QC

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 003

ng/mL	2/1/2015	5/16/15	7/29/15	10/26/15	2/2/16	5/12/16	8/18/16	11/30/16	3/7/17	4/30/17	7/28/17	10/8/17	3/10/18
PFBA	0.486	2.96	0.174	3.37	0.208	3.75	7.02	2.19	3.37	1.96	2.21	3.23	0.299
PFHxA	0.754	0.798	0.112	0.642	0.378	0.576	0.872	0.742	0.681	1.11	0.933	1.26	0.14
PFHpA	0.536	0.861	0.184	0.585	0.241	0.670	1.09	0.973	0.742	1.30	1.50	1.76	0.108
PFOA	2.00	6.17	0.857	4.69	1.43	4.54	7.75	7.57	5.19	10.9	10.4	11.9	0.547
PFBS	2.30	3.04	0.613	1.73	0.667	2.73	3.17	3.43	1.32	2.58	3.51	3.23	0.556
PFHS	1.16	1.76	0.137	0.94	0.253	0.824	0.894	1.43	0.993	1.27	1.89	1.43	0.0827
PFOS	7.59	17.4	4.97	15.6	7.48	18.3	33.4	22.2	9.99	26.000	28.4	20.3	3.89
FBSA	6.15	4.39	1.47	1.68	1.55	2.57	1.67	2.18	1.68	5.53	1.90	5.73	1.20
PFOSA	0.589	6.64	2.61	2.89	0.825	6.32	6.92	2.76	2.32	6.71	5.04	4.6	2.88
NMeFOSAA	0.454	3.83	1.34	2.72	0.741	6.56	5.79	3.03	1.97	3.32	3.96	3.80	1.42
NEtFOSAA	0.671	6.63	2.89	8.34	1.42	12.6	12.5	3.60	4.17	4.79	4.42	5.41	1.93

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 004

ng/mL	2/1/2015	5/16/15	7/29/15	10/26/15	2/2/16	5/12/16	8/18/16	11/30/16	3/7/17	4/30/17	7/28/17	10/8/17	3/10/18
PFBA	13.7	13.0	64.2	10.8	12.7	12.6	12.6	6.52	11.0	35.3	0.169	22.0	21.3
PFHxA	8.43	4.41	16.0	8.03	5.12	15.8	3.83	2.58	3.94	15.1	0.157	11.3	4.29
PFHpA	6.97	3.83	13.7	5.85	3.93	8.76	3.93	2.34	2.58	7.88	0.272	9.37	3.87
PFOA	52.0	28.2	102	48.9	30.2	36.9	27.6	17.0	19.4	48.8	1.21	93.8	25.1
PFBS	64.9	34.0	145	74.7	43.9	11.5	18.9	9.67	21.0	425	0.0813	42.4	120
PFHS	5.21	3.89	9.66	8.12	3.29	18.9	5.52	3.03	5.7	11.3	0.269	18.2	4.41
PFOS	46.2	43.0	103	104	52.2	75.5	84.4	50.2	45.7	80.1	5.69	143	38.8
FBSA	122	64.6	183	23.6	98.7	49.8	50.8	75.4	50.0	282	0.0762	370	431
PFOSA	45.0	39.4	44.3	27.7	35.0	17.2	24.0	13.0	24.3	29.9	1.45	24.9	38.9
NMeFOSAA	12.5	18.1	19.3	22.6	16.5	6.92	20.5	11.9	12.6	23.5	0.668	15.3	7.62
NEtFOSAA	21.1	18.0	19.1	27.7	26.3	6.01	25.6	21.0	19.1	22.8	2.08	23.7	11.8

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 005

ng/mL	2/1/2015	5/16/15	7/29/15	10/26/15	3/14/16	5/12/16	11/30/16	2/28/17	5/4/17	7/28/17	12/20/17	3/10/18
PFBA	25.0	11.4	4.10	5.15	1.45	6.48	5.44	3.13	8.8	3.87	62.1	23.2
PFHxA	30.4	13.7	3.93	3.19	2.45	4.61	2.78	2.35	4.36	2.07	6.13	29.3
PFHpA	14.0	7.00	1.08	1.69	2.56	2.67	3.77	2.27	2.90	2.67	8.33	16.2
PFOA	62.3	34.7	4.74	11.2	16.9	12.2	33.1	16	20.9	16.1	39.3	70.4
PFBS	7.16	6.61	8.96	7.72	1.49	6.39	5.03	2.95	6.29	6.08	173	10.5
PFHS	37.4	14.9	1.73	3.01	1.31	5.25	1.96	1.11	1.81	1.66	3.08	36.0
PFOS	107	62.5	19.9	22.8	48.8	28.8	92.0	67.0	86.2	47.1	65.3	111
FBSA	9.84	9.17	200	16.7	7.32	23.2	25.6	11.6	19.2	8.16	92.6	6.81
PFOSA	3.77	6.86	3.22	6.06	23.3	19.3	33.4 *	42.1	54.5	22.7	26.9	7.47
NMeFOSAA	1.90	3.80	4.73	4.06	59.5	9.68	62.8	163	135	41.4	85.3	1.49
NEtFOSAA	4.16	3.88	5.38	3.78	78.5	6.37	55.0	269	183	67.6	175	2.74

* Qualitative result due to non-compliant QC

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 006

ng/mL	2/1/2015	5/16/15	7/29/15	10/26/15	2/2/16	5/12/16	8/18/16	11/30/16	3/7/17	4/30/17	7/28/17	10/8/17	3/10/18
PFBA	23.9	11.0	4.46	5.08	9.34	6.68	4.56	4.66	7.35	6.43	3.03	5.86	21.0
PFHxA	29.1	13.2	4.12	3.05	12.1	4.79	2.30	3.18	7.05	5.81	3.96	3.98	27.5
PFHpA	13.8	6.89	1.31	1.61	6.71	2.91	1.60	1.55	4.01	2.98	3.14	2.24	14.9
PFOA	58.6	32.6	6.03	12.1	29.7	13.2	9.31	7.37	18.8	12.9	12.9	11.4	63.5
PFBS	7.02	6.60	8.26	7.52	3.90	6.52	10.4	3.42	7.22	3.66	2.71	6.42	9.91
PFHS	34.5	14.5	2.12	3.15	14.9	5.50	2.70	3.17	8.82	6.64	6.24	4.36	33.5
PFOS	106	58.8	20.4	24.2	58.6	32.8	27.8	24.9	30.4	29.3	41.9	25.0	101
FBSA	9.77	9.18	186	16.3	5.28	23.7	7.77	4.83	9.45	8.07	2.23	9.58	6.36
PFOSA	4.04	4.99	3.17	6.10	2.93	10.0	11.0	7.83	5.49	8.15	6.66	5.57	6.41
NMeFOSAA	2.02	2.90	2.59	3.33	1.52	9.42	3.92	1.83	3.58	2.26	5.12	2.56	1.60
NEtFOSAA	4.50	3.31	4.14	4.22	3.18	6.93	6.76	2.78	4.05	3.76	9.39	4.00	2.68

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 007

ng/mL	2/1/2015	5/16/15	8/6/15	10/26/15	1/21/16	5/12/16	8/18/16	11/30/16	2/28/17	5/4/17	7/28/17	12/20/17	3/10/18
PFBA	0.700	1.96	1.04	0.936	0.856	0.668	0.54	0.497	0.327	0.395	0.221	0.449	<0.100
PFHxA	2.33	4.65	2.23	2.61	3.14	1.92	1.31	0.726	0.977	1.36	0.104	1.10	<0.0500
PFHpA	4.29	8.56	4.40	4.82	4.11	3.63	3.04	1.39	1.97	2.96	0.169	2.18	<0.0250
PFOA	25.9	53.8	28.4	37.9	15.1	21.4	20.2	8.02	14.4	19.5	0.747	12.2	0.0352
PFBS	0.936	1.32	1.13	1.33	0.932	0.768	0.586	0.535	0.517	0.769	0.0839	0.550	0.0910
PFHS	4.07	5.55	3.58	3.93	3.96	2.76	1.52	0.475	1.67	2.31	0.179	1.97	<0.0250
PFOS	84.5	157	83.7	79.4	25.3	68.9	64.6	19.9	66.0	84.5	5.06	50.8	0.0543
FBSA	0.400	0.849	0.400	0.696	0.223	0.311	0.296	0.388	0.196	0.269	0.0804	0.171	0.514
PFOSA	3.96	16.2	5.35	3.39	1.45	13.4	5.23	9.62	6.92	6.26	1.07	2.66	0.0968
NMeFOSAA	8.47	21.3	6.72	3.36	2.07	7.52	13.2	7.29	16.9	12.0	0.575	5.97	<0.0500
NEtFOSAA	11.2	19.2	9.02	4.20	3.06	8.08	14.2	8.50	18.2	14.0	2.01	8.55	<0.0998

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 008

ng/mL	2/16/2015	5/27/15	8/6/15	11/2/15	1/21/16	5/12/16	8/18/16	11/30/16	2/28/17	4/30/17	7/28/17	12/20/17	3/10/18
PFBA	0.187	<0.0250	<0.0500	0.077	0.0487	0.326	0.202	0.0632	0.319	0.0815	<0.100	1.56	0.615
PFHxA	0.407	<0.0250	<0.0250	<0.0250	0.114	0.688	0.273	0.0568	0.474	0.412	0.0556	2.86	2.03
PFHpA	0.555	<0.0250	<0.0250	0.0333	0.200	2.03	0.765	0.0979	0.934	1.33	0.146	4.02	3.06
PFOA	2.92	<0.0480	<0.0480	0.301	1.16	10.4	3.77	0.511	5.75	7.88	0.746	18.6	12.8
PFBS	0.243	0.0264	<0.0250	<0.0250	0.0407	0.105	<0.0250	0.0369	0.161	0.064	<0.0500	0.683	0.426
PFHS	0.274	<0.0250	<0.0236	<0.0236	0.142	0.624	0.138	0.0372	0.262	0.198	0.0697	2.83	2.14
PFOS	13.4	0.192	0.143	1.35	5.80	23.60	9.13	1.59	7.24	9.50	3.32	40.5	25.0
FBSA	0.133	NR	0.0364	0.220	<0.0500	0.145	0.0633	0.0266	0.111	0.0515	<0.0250	0.453	0.189
PFOSA	6.27	0.0360	<0.0250	1.75	7.35	132	20.0	0.877	11.9	8.31	1.86	12.6	6.75
NMeFOSAA	24.2	<0.0250	<0.0250	8.10	16.4	192	71.3	3.92	39.8	13.8	6.17	34.0	20.6
NEtFOSAA	18.1	<0.0250	0.0265	6.24	15.1	119	56.1	3.49	26.4	10.6	5.79	35.8	12.8

NR = Not Reportable due to non-compliant sample QC.

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 009

ng/mL	2/1/2015	5/27/15	8/6/15	11/2/15	1/21/16	5/12/16	8/18/16	11/30/16	2/28/17	5/4/17	7/28/17	12/20/17	3/10/18
PFBA	BLOQ	2.02	0.0789	<0.0250	<0.0250	<0.0250	<0.0250	0.0886 *	<0.100	<0.0500	0.171	<0.0500	0.491
PFHxA	BLOQ	6.46	0.318	<0.0250	<0.0250	<0.0250	<0.0250	0.0605 *	<0.0250	<0.0250	0.0924	<0.0500	1.51
PFHpA	BLOQ	14.9	1.06	<0.0250	<0.0500	<0.0250	<0.0250	0.0463 *	<0.0250	<0.0250	0.137	<0.0500	3.65
PFOA	<0.0480	81.1	17.1	<0.0480	<0.0480	0.0270	<0.0240	0.0503 *	<0.0240	<0.0240	0.579	<0.0480	13.6
PFBS	<0.0250	1.33	<0.0250	<0.0250	<0.0500	<0.0250	<0.0250	0.0586 *	<0.0250	0.0298	<0.0500	<0.0500	0.855
PFHS	BLOQ	3.96	0.115	<0.0236	<0.0250	<0.0250	<0.0250	0.0460 *	<0.0250	<0.0250	0.0743	<0.0500	1.31
PFOS	0.122	164	40.1	0.202	0.0758	0.0843	0.118	0.186	0.0621	0.101	3.13	0.0719	12.2
FBSA	0.0717	0.568	0.0615	0.0591	<0.0500	0.0407 *	0.0297 *	0.106 *	<0.0250	0.0304	0.0388	0.0387	0.610
PFOSA	0.0570	98.5	44.8	0.0415	<0.0250	0.0516	0.0693	0.0900 *	0.0296	0.0314	0.656	<0.0250	2.58
NMeFOSAA	0.174	249	236	<0.0250	<0.0500	0.0534	0.0577	0.0924 *	0.0295	<0.0500	0.291	<0.0250	1.19
NEtFOSAA	0.121	145	161	<0.0250	<0.0250	<0.0250	0.0552	0.0564 *	0.0258	<0.0250	0.707	<0.0250	1.40

BLOQ = Below Limit of Quantitation.
* Qualitative result due to non-compliant QC

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 011

ng/mL	2/1/2015	5/27/15	8/6/15	10/26/15	1/21/16	5/12/16	8/18/16	11/30/16	2/28/17	5/4/17	7/28/17	10/8/17	3/10/18
PFBA	0.0319	<0.0250	<0.0500	0.0341	0.0986	0.136	0.0927	0.0796 *	<0.100	<0.0500	0.338	<0.100	0.444
PFHxA	0.0565	<0.0250	0.0356	<0.0250	0.287	0.218	0.0906	0.0896 *	<0.0250	<0.0250	0.0969	<0.0250	1.34
PFHpA	0.0583	<0.0250	0.0330	<0.0250	1.06	0.294	0.109	0.0936 *	<0.0250	<0.0250	0.111	<0.0250	3.34
PFOA	0.405	0.138	0.146	0.103	8.70	1.63	0.645	0.396	0.0978	0.0510	0.507	0.0388	11.6
PFBS	0.0761	0.0962	0.169	0.105	0.0846	0.170	0.107	0.0898	2.76	0.685	<0.0500	0.185	0.784
PFHS	0.0445	0.0411	0.0329	<0.0236	0.857	0.305	0.150	0.0901 *	<0.0250	<0.0250	0.0555	<0.0250	1.16
PFOS	1.87	1.38	0.990	0.854	17.4	9.02	4.96	2.13	0.848	0.796	2.37	0.531	10.8
FBSA	0.213	NR	0.105	0.106	0.0773	0.108	0.107 *	1.55 *	0.637	0.455	0.0322	0.135	0.573
PFOSA	0.236	0.258	0.0826	0.0463	0.650	1.38	0.532	0.841 *	0.316	0.407	0.489	<0.0250	2.18
NMeFOSAA	0.402	0.346	0.0407	<0.0250	1.63	1.26	0.157	0.153	0.789	0.0867	0.195	<0.0250	0.988
NEtFOSAA	0.407	0.296	0.0604	<0.0250	1.51	1.14	0.350	0.150	0.644	0.175	0.467	<0.0250	1.26

NR = Not Reportable due to non-compliant sample QC.

* Qualitative result due to non-compliant QC

Attachment 2C-4: Table 1
Summary of Quarterly Outfall PFAS Analytical Results
(1Q 2015 - 1Q 2018)
DSN 012

ng/mL	2/16/2015	5/27/15	7/29/15	10/26/15	1/21/16	5/12/16	8/18/16	11/30/16	2/28/17	4/30/17	7/28/17	10/8/17	3/10/18
PFBA	0.0896	0.366	<0.0500	<0.0250	0.134	<0.0250	<0.0250	0.38	0.379	<0.0500	0.156	0.550	0.562
PFHxA	0.0660	0.237	<0.0250	<0.0250	0.120	<0.0250	<0.0250	0.213	0.152	<0.0250	<0.0500	0.348	0.546
PFHpA	0.0922	0.199	0.0288	<0.0250	0.139	<0.0250	<0.0250	0.19	0.146	<0.0250	0.0412	0.293	0.622
PFOA	0.0971	1.14	0.176	<0.0480	0.802	0.0851	0.0383	1.04	0.876	0.0457	0.212	1.24	2.01
PFBS	0.0700	0.0915	0.0782	<0.0250	<0.0500	0.0323	<0.0250	0.0747	<0.0500	<0.0250	<0.0500	0.0889	0.117
PFHS	0.0858	0.155	<0.0236	<0.0236	0.0855	<0.0250	<0.0250	0.115	0.0781	<0.0250	<0.0250	0.145	0.280
PFOS	0.503	3.75	0.454	0.461	3.22	0.495	0.348	4.58	5.47	0.336	1.43	4.41	6.44
FBSA	0.196	NR	0.430	0.0862	<0.0500	0.0409 *	0.0396 *	0.0399	0.0389	0.0336	0.0320	0.0543	0.107
PFOSA	0.109	0.343	0.218	0.0676	0.613	0.235	0.110	3.18	1.88	0.244	0.264	1.68	2.85
NMeFOSAA	0.0704	0.676	0.0889	0.0543	0.703	0.0694	<0.0250	1.03	2.37	0.0482	0.0982	1.06	1.34
NEtFOSAA	0.0909	0.450	0.079	0.0859	1.14	0.106	0.0293	1.79	2.01	0.0516	0.247	1.78	1.75

NR = Not Reportable

* Qualitative result due to non-compliant QC

Please print or type in the unshaded areas only.

EPA ID Number (*copy from Item 1 of Form 1*)
[illegible]

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

FORM **2F** NPDES

EPA

U.S. Environmental Protection Agency
Washington, DC 20460

Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 28.6 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of this collection of information, or suggestions for improving this form, including suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503

I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. Outfall Number (*list*)	B. Latitude			C. Longitude			D. Receiving Water (*name*)
See Attachment							
2F-1 for Outfall							
Locations							

II. Improvements

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	number	source of discharge		a. req	b. proj
Not Applicable					

B: You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

III. Site Drainage Map

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfalls(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage of disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which received storm water discharges from the facility.

Refer to Figure 2F-2 and Attachment 2F-2

Continue on Page 2

Continued from the Front

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of imperious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)	Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
	See Figure 2F-2				

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas, and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

See Attachment 2F-3

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1
DSN 003-006	All outfalls are covered under the BMP Plan. All have gated structures that can be closed to contain spills	4-A
DSN 002 & 007-012	Outfalls DSN 002 (storage and loading & unloading) & DSN 007-012 (non-production areas) are regularly inspected.	
DSN 013	Stormwater discharges to an infiltration pond, which is regularly inspected	

V. Nonstormwater Discharges

A. I certify under penalty of law hat the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharged from these outfall(s) are identified in either an accompanying Form 2C or From 2E application for the outfall.

Name and Official Title (*type or print*)	Signature	Date Signed
Michelle Howell	Michelle Howell	8/31/18

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

Visual non-stormwater inspections during dry weather are conducted regularly. There have been no observed discharges present except at Outfall DSN006. This outfall includes flow from a spring.

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

See Attachment 2F-4

 Continue on Page 3

Continued from Page 2

EPA ID Number *(copy from Item 1 of Form 1)*
AL0000205

VII. Discharge Information

A, B, C, & D: **See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.**
Table VII-A, VII-B, VII-C are included on separate sheets numbers VII-1 and VII-2.

E. Potential discharges not covered by analysis – is any toxic pollutant listed in table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☑ Yes *(list all such pollutants below)* ☐ No *(go to Section IX)*

See Attachment 2C-4 for a summary of quarterly NPDES permit testing for perfluoroalkyl substances for outfalls DSN 002-009, 011, and 012 (first quarter 2015 through first quarter 2018)

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☑ Yes *(list all such pollutants below)* ☐ No *(go to Section IX)*

Whole effluent toxicity testing was conducted at outfall 001 in accordance to the NPDES permit requirements.

IX. Contract Analysis Information

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

☑ Yes *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ No *(go to Section X)*

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
Enersolv (performs sampling)	2220 Beltline Road Decatur, AL 35601	(256) 350-0846	All NPDES Form 2F parameters
Pace Analytical (sample analysis)	1800 Elm Street SE Minneapolis, MN 55414	(612) 607-6400	All NPDES Form 2F parameters except for PFAS

X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title *(Type Or Print)*	B. Area Code and Phone No.
Michelle Howell	(256) 552-6300
C. Signature: Michelle Howell	D. Date Signed: 08/28/2018

EPA ID Number (*copy from Item 1 of Form 1*)
AZ0000265

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge Information *(Continued from page 3 of Form 2F)*

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (*if available*)	Maximum Values (*include units*)		Average Values (*include units*)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	See Attachment 2F-5. Results for DSN 002, 003, 004, 005, 006, 007, 008, 009, 011, and 012 only are included in this application. Sampling of DSN 010 and 013 has not been possible due to no flow at these locations.					
Biological Oxygen Demand (BOD5)						
Chemical Oxygen Demand (COD)						
Total Suspended Solids (TSS)						
Total Nitrogen						
Total Phosphorus						
pH						

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (*if available*)	Maximum Values (*include units*)		Average Values (*include units*)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
See Attachment 2F-5.						

Continued from the Front

Part C - List each pollutant shown in Table 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.						
Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
			See Attachment 2F-5.			

Part D – Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event *(in minutes)*	3. Total rainfall during storm event *(in inches)*	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event *(gallons/minute or specify units)*	6. Total flow from rain event *(gallons or specify units)*
Not yet available					

7. Provide a description of the method of flow measurement or estimate.

Not yet available - Composite sampling information will be provided when samples have been collected and analyzed

Attachment 2F-1: Regulated Outfalls

Response to Form 2F Section I.

Outfall Number	Latitude	Longitude	Receiving Water	Notes
DSN 002	34.645813	-87.044169	Tennessee River	
DSN 003	34.645570	-87.042325	Tennessee River	
DSN 004	34.644487	-87.037799	Tennessee River	
DSN 005	34.642267	-87.034101	Baker's Creek	
DSN 006	34.641380	-87.035114	Baker's Creek	
DSN 007	34.634057	-87.051786	Unnamed Tributary to Baker's Creek	Request to remove from permit –no longer any industrial activities in this sub-watershed
DSN 008	34.619805	-87.045471	Unnamed Tributary to Baker's Creek	Request to remove from permit –no longer any industrial activities in this sub-watershed
DSN 009	34.619905	-87.051523	Unnamed Tributary to Baker's Creek	Request to remove from permit – no longer receives flow from 3M property
DSN 010	34.619760	-87.042919	Unnamed Tributary to Baker's Creek	Request to remove from permit – no longer any industrial activities in this sub-watershed
DSN 011	34.619855	-87.039644	Unnamed Tributary to Baker's Creek	Request to remove from permit –no longer any industrial activities in this sub-watershed
DSN 012	34.623909	-87.038602	Unnamed Tributary to Baker's Creek	Request to remove from permit –no longer any industrial activities in this sub-watershed
DSN 013	34.635025	-87.039484	Unnamed Tributary to Baker's Creek	
Outlet H1 (Proposed DSN 014)	34.634537	-87.039946	Unnamed Tributary to Baker's Creek	Request to add to permit
Outlet Q (Proposed DSN 015)	34.641101	-87.034215	Tennessee River	Request to add to permit
Outlet R (Proposed DSN 016)	34.644233	-87.035877	Tennessee River	Request to add to permit
Outlet B (Proposed DSN 017)	34.645700	-87.041800	Tennessee River	Request to add to permit
Outlet T1 (Proposed DSN 018)	34.647100	-87.049500	Tennessee River	Request to add to permit

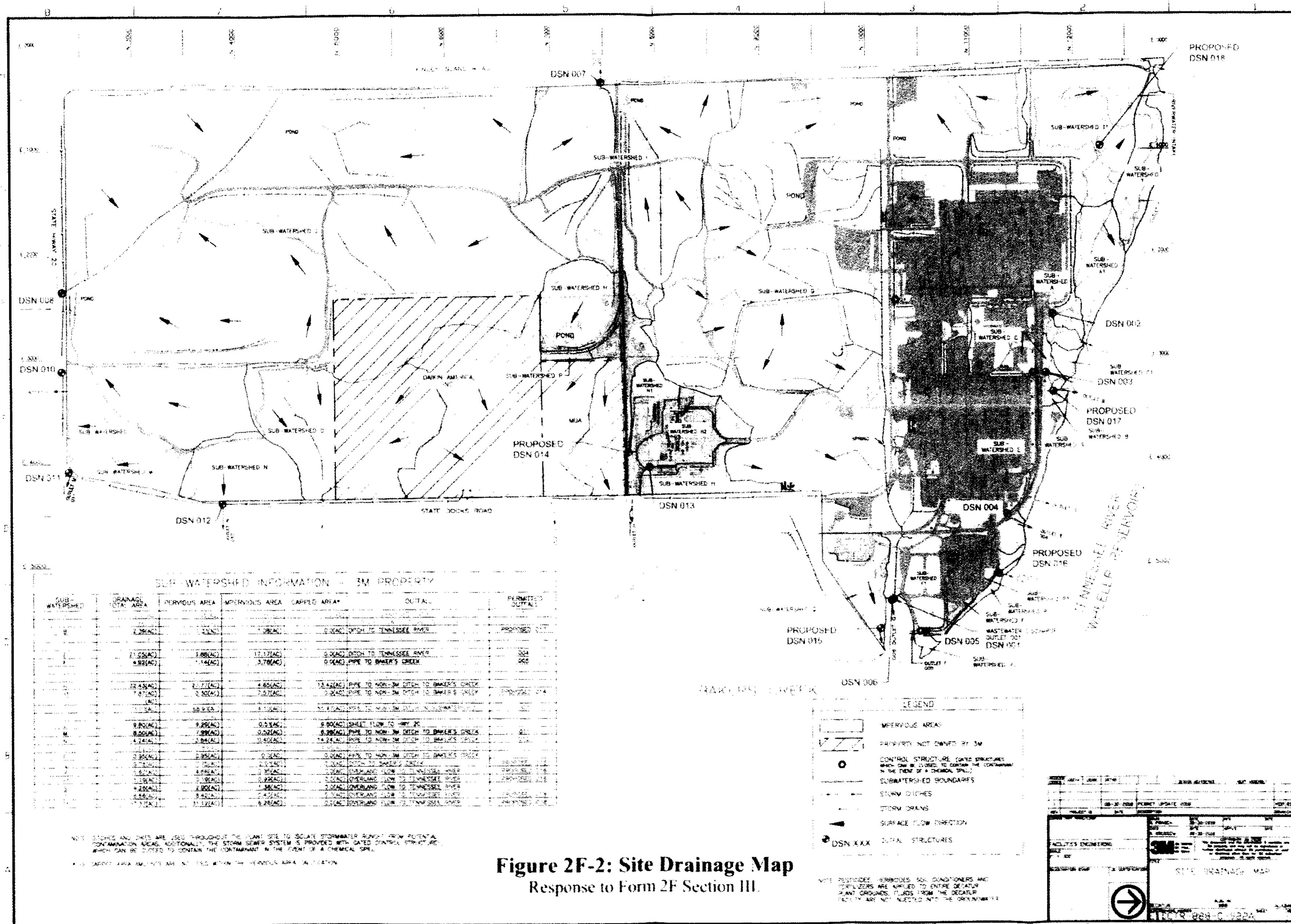

Figure 2F-2: Site Drainage Map
Response to Form 2F Section III.

Attachment 2F-2: Description of Sub-watersheds and Outfalls

Response to Form 2F Section III.

Note: In general, changes to the sub-watersheds and outfalls are a result of ongoing capping activities in the south fields, various plant-related construction projects and an updated site-wide topographic map with a 1-foot contour interval developed using aerial imagery and photogrammetry.

Sub-watershed A

Outlet A - Outfall DSN 002

This outfall is located in the northwest portion of the plant. Discharge from this area is through a 48-inch x 32-inch elliptical pipe. The industrial activity in this area includes material storage in silos and loading/unloading. The discharge from this area is covered under storm water regulations.

Sub-watershed A1

Outlet A1

This sub-watershed was newly delineated as a result of higher resolution topographic maps since the last permit renewal. No industrial activity takes place in this sub-watershed and discharge from this area is to the Tennessee River via sheet flow.

Sub-watershed B

Outlet B - Proposed Outfall DSN 017

This watershed has been newly delineated since the last permit renewal to encompass areas with industrial activity. Industrial activity in this area includes loading/unloading, material storage, and rail car storage. Discharge from this area is through a 24-inch culvert. The discharge from this area is requested to be added to the renewed permit for coverage under storm water regulations.

Sub-watershed C

Outlet C - Outfall DSN 003

This outfall is located in the northern portion of the facility. The industrial activity in this area includes a boneyard that stores scrap metal and wood. Runoff from this area discharges to the stormwater outfall. Discharge from this area is through a 36-inch culvert. The discharge from this area is covered under storm water regulations.

Sub-watershed C1

Outlet C1

This sub-watershed was newly delineated as a result of higher resolution topographic maps since the last permit renewal. No industrial activity takes place in this sub-watershed and discharge from this area is to the Tennessee River via sheet flow.

Sub-watershed D

Outlet D

The areas formerly part of sub-watershed D have been newly delineated to be part of sub-watershed T based on higher resolution topographic maps. Outlet D no longer exists.

Sub-watershed E

Outlet E - Outfall DSN 004

This outfall is located in the northeastern portion of the plant. Discharge from this area is through a 48-inch culvert. The industrial activity in this area includes the North, West, and East tank farm areas, material and drum storage, loading/unloading and a contractor storage area. The discharge from this area is covered under storm water regulations.

Sub-watershed F

Outlet F - Outfall DSN 005

This outfall drains the area around the wastewater treatment plant, which is located east of the facility. Discharge from this area is through a 24-inch culvert. The discharge from this area is covered under storm water regulations.

Sub-watershed F1

Outlet F1

This watershed consists of the areas around the polishing ponds, which are located directly south of the wastewater treatment plant. Runoff from this area is into the polishing ponds. The discharge from the ponds is covered under wastewater regulations under outfall DSN 001A and DSN 001.

Sub-watershed G

Outlet G - Outfall DSN 006

This outfall drains the southern portion of the facility and a large open field area. A spring is located as indicated on the site maps. The outfall is located on the eastern side of the facility. This outfall includes run on from an area west of the facility that is routed onto 3M properties through a 48-inch culvert. The run on consists of storm water runoff from the Indorama facility and from the highway that runs north and south along the western side of 3M's property. Discharge from this outfall is covered under storm water regulations.

Sub-watershed H

Outlet H - Outfall DSN 013

This outfall drains the Plastics Manufacturing area. The activities include above ground storage tanks, drum storage, loading/unloading and railroad tracks. The AST secondary containment discharges to the chemical sewer system with the exception of the DI water and the Calcium Chloride tanks. Stormwater from the overall area discharges to a pond that historically does not discharge off-site. The detention area in Area H-2 contains a concrete weir wall structure that controls the level of the permanent pool and may or may not have overflow during precipitation events that contribute to DSN 013.

Sub-watershed H1

Outlet H1 - Proposed Outfall DSN 014

This outfall drains a small area in the southwest corner of the Plastics Manufacturing area that is not routed to the storm water pond. The activities include material storage, trailer storage, and loading/unloading. The outlet is located south of the drainage area just prior to entering a ditch adjacent to railroad tracks that are not owned by 3M. 3M is requesting this outlet to be added to the renewed permit for coverage under stormwater regulations.

Sub-watersheds I, J, K, L, M, N

Outlets I, J, K, L, M, N - Outfalls DSN 007 through 012

These permitted outfalls historically received runoff from the former sludge incorporation area (FSIA). Going forward, these areas will be maintained as open, vegetated fields. Because stormwater is no longer in contact with the FSIA and there will be no industrial activity in these areas, the outlets no longer require coverage under storm water regulations. Also note, outfall DSN 009 no longer receives flow from the property due to elimination of sub-watershed K as a result of soil excavation activities (capping related) in the southwest corner of the site. 3M requests that these outfalls be removed from the permit.

3M proposes to continue to monitor outfalls DSN 007, DSN 008, DSN 010, DSN 011 and DSN 012 for poly- and perfluoroalkyl substances (PFAS) to evaluate the effectiveness of the multi-layer cap. This monitoring could be incorporated into the NPDES Remedial Action Agreement.

Sub-watershed O and P

Outlets O and P

A portion of sub-watershed O is located on 3M property and was part of the FSIA. The multi-layer cap is currently being constructed over this area. Placement of the 40-mil liner will be completed by the end of 2018. The remainder of sub-watershed O and sub-watershed P drain areas that are not owned by 3M and are therefore not included in this permit application. These sub-watersheds are monitored by a neighboring facility.

Sub-watershed Q

Outlet Q - Proposed Outfall DSN 015

This drainage area is located south of the wastewater treatment facility. 3M recently installed a containment system for storage of hazardous material trailers that would discharge to this outlet. Because of this new activity, 3M is requesting this outlet to be added to the renewed permit for coverage under stormwater regulations.

Sub-watershed R

Outlet R

This drainage area is located on the east side of the facility. Runoff from these areas is routed to the Tennessee River via sheet flow.

Sub-watershed R1

Outlet R1 - Proposed Outfall DSN 016

3M is currently undertaking a project to install a process water treatment system in this area. Because of this new industrial activity, 3M is requesting this outlet to be added to the renewed permit for coverage under stormwater regulations.

Sub-watershed S

Outlet S

This drainage area is located on the north side of the facility. The only activities in this area are railroad tracks. Runoff from these areas is routed to the Tennessee River via sheet flow. Therefore, these areas do not require coverage under storm water regulations.

Sub-watershed T

Outlet T

This sub-watershed was newly delineated as a result of higher resolution topographic maps since the last permit renewal. The water intake structure for the facility is located within this drainage area; however, no discernable discharge point has been observed in the area of the intake structure. Therefore, this area is not covered by stormwater regulations.

Sub-watershed T1

Outlet T1 - Proposed Outfall DSN 018

This drainage area is located on the northwest side of the facility. Recently 3M has modified this drainage area to include a building expansion. These modifications have resulted in the direction of runoff from areas that will contain roadways and manufacturing buildings. No chemicals storage will occur in this area. Because of this new industrial activity, 3M is requesting this outlet to be added to the renewed permit. The outlet is located just northwest of a new stormwater retention basin that accepts flow from roadways and buildings in the sub-watershed.

Attachment 2F-3: Significant Materials Exposure

Response to Form 2F Section IV.B.

Outfall Number	Description
DSN 002	Particulate polyester
DSN 003	Tanks in this area have stormwater going into the chemical sewer system
DSN 004	Listed wastes F002, F003, and F005 north of Bldg. 4.
	PBSF tanks (out of service)
	Chemical plant tank farm containing acetone, ethyl acetate, and heptane.
	Methylamine tanks located north of Bldg. 41.
	TFE, VF2, propylene tanks east of Bldg. 38, DFE and ethylene oxide cylinders
	Hexafluoropropylene tank southwest of Bldg. 38.
	Ethylene carbonate and methylamine located west of Bldg. 3.
DSN 005	There are various activities associated with the wastewater treatment plant including the treatment of wastewater sludge material.
	Lime and phosphoric acid located at the wastewater treatment plant.
	Magnesium oxide tank at wastewater treatment plant
	Sulfuric Acid and Sodium Hydroxide Totes
DSN 006	Used oil storage south of building 13 and east of Bldg. 5.
	Bulk Hazardous waste loading station south of the boiler house
	Hazardous waste drum storage south of Bldg. 19.
	Bldgs. 15 and 74 tank farms located adjacent of each building containing storage for methanol and ethylene glycol.
	Kelite solution located north of Bldg. 39.
	Propane tanks west of building 19 and north of Bldg. 20.
	Dimethyl terapthalate tanks located south of Bldg. 15.
	Various Suez chemicals on the south and east side of boilerhouse and Bldg. 76.
	Fuel oil #2 and #6 east of the boilerhouse.
	Fuel oil #2 at building 6, west of building 36, and at the fire test area.
	Fuels in an aboveground tank at the fire test area.
	Propane south of Bldg. 49.
	Gasoline tank located at the hazardous waste tank farm south of Bldg. 5.
DSN 013	Calcium Chloride tank
	Sodium Hydroxide tank north of Bldg. 82
	Polyvinylidene fluoride powders
	Raw material and Hazardous Waste Tanker Storage, Unloading and Loading stations
DSN 014	Tanker Parking lot
DSN 015	Hazardous Waste Tankers and Product Tankers Storage location
DSN 016	Diesel fuel oil storage Bldg 36.
	A small amount of stormwater runoff from the wastewater treatment plant discharges from this area.
DSN 017	Stationary Storage of Resin
DSN 018	Bldg. 28/29 Parking lot drainage

Attachment 2F-3: Stormwater Management Practices

Response to Form 2F Section IV.B.

1.	Many of the outside tanks have containment areas or dikes to contain any spilled material. Many of these containment areas are piped directly into the wastewater treatment area. Some of the containment areas not piped directly to the wastewater treatment area are checked periodically for leaks.
2.	Spills from outside storage areas are handled by trained individuals from the emergency response squad. Spill containment items have been set up in various locations throughout the plant and a spill van is available at the fire truck house for mobile use.
3.	The wastewater facility has access to a vacuum truck that can be used to collect large liquid spills. If a spill occurs to the stormwater, wastewater personnel are also trained to close specified stormwater gates in order to help contain the spill.
4.	An SPCC plan has been set up for all petroleum based products used. A RCRA contingency plan has been set up for hazardous wastes that are generated and managed.
5.	Used oil is stored in either buildings or containment areas.
6.	Stormwater containment pits have been constructed at various locations throughout the plant site. Water is visually checked before being released to the site drainage ditches. At the fire test area, a collection pit is pumped off and released to wastewater.
7.	Trucks containing spilled material are taken to wastewater and washed out on the cleaning pad. The two drum washing stations and the pipe washing station have concrete containment and are drained to wastewater.
8.	The hazardous waste tank loading stations have coated concrete containment. The outside hazardous waste drum storage area has a coated containment area. The film plant rail car dock area has its runoff fed to a containment area which is pumped off to wastewater.
9.	The chemical plant rail unloading station has a containment area. The film plant rail car dock area has its runoff fed to a containment area which is pumped off to wastewater.
10.	The outside storage, unloading, and containment areas have a daily, weekly, or monthly inspection conducted by plant personnel.
11.	Stormwater ditches and pools are randomly checked from time to time to detect any unusual conditions of the stormwater.

Attachment 2F-3: Material Loading, Access, and Cleaning Stations

Response to Form 2F Section IV.B.

1.	Bldg 59, 39, 17, 74, 14, 28, and 1 loading docks.
2.	Rail car dock area located north of DMT tanks and south of Bldg. 19 and 15.
3.	Sodium hydroxide unloading east of Bldg 3 and north of Bldg 5.
4.	Used oil drum loading south of Bldg 13 and east of Bldg. 5.
5.	Hazardous waste drum loading south of Bldg. 19.
6.	DMT tank unloading south of Bldg. 15.
7.	Rail car unloading north of Bldg. 5.
8.	Rail car unloading north of chemical plant tank farm.
9.	Tank area loading between Bldg. 3 and 4.
10.	Unloading area for aboveground tanks at wastewater treatment plant and indoor sludge loading.
11.	Unloading of fuel oils, gasoline, and aviation fuel at the various tanks located around the plant site.
12.	Drum cleaning station and crusher located west of Bldg. 1.
13.	Drum cleaning station located between building 3 and 4.
14.	Loading and unloading station west of Bldg 9.
15.	Loading station east of Bldg. 38.
16.	Subwater shed Q includes trailer staging and access area at parking area east of main gate guardhouse.
17.	Truck, drum, tank, and box loading and unloading Plastics Plant north of 84, west of plant, and north of 82.
18.	Tanker Unloading Station (Primarily Tank Farm 398).
19.	Wash Pad.
20.	WDF tanker loading station south of Bldg. 5.
21.	Scrap Flake trailer loading area west of Bldg. 14.

Attachment 2F-3: Landscaping Applications

Response to Form 2F Section IV.B.

Locations	Frequency
South Fields	
Fertilizers	
17-17-17	1 time per year
Lime	1 time every 1 to 2 years
Lesco 25-2-5 Pre-emergent	2-3 times per year
14-14-14	2-3 times per year
Herbicides	
Roundup Ultra	1 time per year
Garlon 3A	12 times per year
Prosecutor (Roundup)	10-15 times per year
Plant Grounds	
Fertilizers	
Lesco 25-2-5 Pre-emergent	2-3 times per year
14-14-14	2-3 times per year
Herbicides	
Snapshot 2.5	2-3 times per year
Three-way Selective	1-2 times per year
Prosecutor (Roundup)	10-15 times per year
Amine 2-4D	5-6 times per year
Insecticides	
Bandit	1 time per year
Dormant Oil	2-3 times per year

Attachment 2F-4: Significant Leaks or Spills

Response to Form 2F Section VI.

Date	Location	Amount	Material
June 29, 2017	Building 3	700 pounds	Methylamine
April 21, 2016	Building 3	6,000 pounds	Toluene

Spill Criteria:

1) Release was non-airborne,
2) Identified material is hazardous or toxic, and
3) Spill occurred outside that had a potential to discharge through stormwater outfalls or direct discharge to river.

Attachment 2F-5: Discharge Information
DSN 002

	Pollutant	Believed Present	Testing Required	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	**Required Parameters**								
	O&G	NA	X	0		0		12	mg/L
	BOD5	NA	X					0	
	COD	NA	X	73.5		21.2		14	mg/L
	TSS	NA	X	70.0		15.1		14	mg/L
	Total Nitrogen	NA	X					0	
	Total Phosphorus	NA	X					0	
	pH	NA	X	7.7		7.1		14	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001, 1A, 1B, and 1C)**								
	TOC	NA	X	27.6		9.06		14	mg/L
	Ammonia	NA	X					0	
	TKN	NA	X					0	
	Nitrate-Nitrite	NA	X					0	
	Fluoride	NA	X					0	
	E.coli	NA	X					0	
	Chromium, Total	NA	X					0	
	Copper, Total	NA	X					0	
	Lead, Total	NA	X					0	
	Nickel, Total	NA	X					0	
	Zinc, Total	NA	X					0	
	Perfluoroctanoic Acid (PFOA)	See Attachment 2C-4							
	Perfluorobutanoic Acid (PFBA)								
	Perfluorobutanesulfonamide (PFBSA)								
	Perfluorooctanesulfonamide (PFOSA)								
	Perfluorooctanesulfonate (PFOS)								
	Perfluorohexanoic Acid (PFHxA)								
	Perfluoroheptanoic Acid (PFHpA)								
	Perfluorobutanesulfonate (PFBS)								
	Perfluorohexanesulfonate (PFHS)								
	2-(N-ethyl-PFOSA) acetic acid								
	2-(N-methyl-PFOSA) acetic acid								
	Acenaphthene	NA	X					0	
	Acrylonitrile	NA	X					0	
	Benzene	NA	X					0	
	Carbon tetrachloride	NA	X					0	
	Chlorobenzene	NA	X					0	
	1,2,4-trichlorobenzene	NA	X					0	
	Hexachlorobenzene	NA	X					0	
	1,2-dichloroethane	NA	X					0	
	1,1,1-trichloroethane	NA	X					0	
	Hexachloroethane	NA	X					0	
	1,1-dichloroethane	NA	X					0	
	1,1,2-trichloroethane	NA	X					0	
	Chloroethane	NA	X					0	
	Chloroform	NA	X					0	
	1,2-dichlorobenzene	NA	X					0	
	1,3-dichlorobenzene	NA	X					0	
	1,4-dichlorobenzene	NA	X					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA	X					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA	X					0	
	1,2-dichloropropane	NA	X					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA	X					0	
	2,4-dimethylphenol	NA	X					0	
	Ethylbenzene	NA	X					0	
	Fluoranthene	NA	X					0	
	Methylene chloride (Dichloromethane)	NA	X					0	
	Methyl chloride (Chloromethane)	NA	X					0	
	Hexachlorobutadiene	NA	X					0	
	Naphthalene	NA	X					0	
	Nitrobenzene	NA	X					0	
	2-nitrophenol	NA	X					0	
	4-nitrophenol	NA	X					0	
	2,4-dinitrophenol	NA	X					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA	X					0	
	Phenol	NA	X					0	
	Bis(2-ethylhexyl) phthalate	NA	X					0	
	Di-n-Butyl Phthalate	NA	X					0	
	Diethyl Phthalate	NA	X					0	
	Dimethyl phthalate	NA	X					0	
	Benzo(a) anthracene	NA	X					0	
	Benzo(a) pyrene	NA	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 002

EPA ID # AL0000205

	Pollutant	Believed Present	Testing Required	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
	Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA	X					0	
	Benzo(k) fluoranthene	NA	X					0	
	Chrysene	NA	X					0	
	Acenaphthylene	NA	X					0	
	Anthracene	NA	X					0	
	Fluorene	NA	X					0	
	Phenanthrene	NA	X					0	
	Pyrene	NA	X					0	
	Tetrachloroethylene (Tetrachlorethene)	NA	X					0	
	Toluene	NA	X	0		0.00		12	ug/L
	Trichloroethylene (Trichlorethene)	NA	X					0	
	Vinyl chloride	NA	X					0	
	Cyanide, Total	NA	X					0	
Part C	**Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**								
	Table 2F-2							0	
	Bromide							0	
	Chlorine, Total Residual							0	
	Color							0	
	Fecal Coliform							0	
	Fluoride	X	X					0	
	Nitrate-Nitrite							0	
	Nitrogen, Total Organic							0	
	Oil and Grease	X	X					0	
	Phosphorus, Total	X	X					0	
	Radioactivity							0	
	Sulfate	X	X					0	
	Sulfite	X	X					0	
	Surfactants	X	X					0	
	Aluminum, Total							0	
	Barium, Total	X	X					0	
	Boron, Total							0	
	Cobalt Total	X	X					0	
	Iron, Total	X	X					0	
	Magnesium, Total							0	
	Molybdenum, Total	X	X					0	
	Manganese, Total	X	X					0	
	Tin, Total	X	X					0	
	Titanium, Total							0	
	Table 2F-3								
	Antimony, Total	X	X					0	
	Arsenic, Total							0	
	Beryllium, Total							0	
	Cadmium, Total							0	
	Chromium, Total							0	
	Copper, Total	X	X					0	
	Lead, Total	X	X					0	
	Mercury, Total	X	X					0	
	Nickel, Total							0	
	Selenium, Total							0	
	Silver, Total							0	
	Thallium, Total							0	
	Zinc, Total	X	X					0	
	Cyanide, Total							0	
	Phenols, Total	X	X					0	
	Acrolein							0	
	Acrylonitrile							0	
	Benzene							0	
	Bromoform							0	
	Carbon Tetrachloride							0	
	Chlorobenzene							0	
	Chlorodibromomethane							0	
	Chloroethane							0	
	2-Chloroethylvinyl Ether							0	
	Chloroform							0	
	Dichlorobromomethane							0	
	1,1-Dichloroethane							0	
	1,2-Dichloroethane	X	X					0	
	1,1-Dichloroethylene							0	
	1,2-Dichloropropane							0	
	1,3-Dichloropropylene							0	
	Ethylbenzene	X	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 002

Pollutant	Believed Present	Testing Required	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Methyl Bromide							0	
Methyl Chloride							0	
Methylene Chloride							0	
1,1,2,2,-Tetrachloroethane							0	
Tetrachloroethylene							0	
Toluene	X	X					0	
1,2-Trans-Dichloroethylene							0	
1,1,1-Trichloroethane							0	
1,1,2-Trichloroethane							0	
Trichloroethylene							0	
Vinyl Chloride							0	
2-Chlorophenol							0	
2,4-Dichlorophenol							0	
2,4-Dimethylphenol							0	
4,6-Dinitro-O-Cresol							0	
2,4-Dinitrophenol							0	
2-Nitrophenol							0	
4-Nitrophenol							0	
p-Chloro-M-Cresol							0	
Pentachlorophenol							0	
Phenol	X	X					0	
2,4,6-Trichlorophenol							0	
2-methyl-4,6 dinitrophenol							0	
Acenaphthene							0	
Acenaphthylene							0	
Anthracene							0	
Benzidine							0	
Benzo(a)anthracene							0	
Benzo(a)pyrene							0	
3,4-Benzofluoranthene							0	
Benzo(ghi)perylene							0	
Benzo(k)fluoranthene							0	
Bis(2-chloroethoxy)methane							0	
Bis(2-chloroethyl)ether							0	
Bis(2-chloroisopropyl)ether							0	
Bis(2-ethylyhexyl)phthalate							0	
4-Bromophenyl Phenyl Ether							0	
Butylbenzyl Phthalate							0	
2-Chloronaphthalene							0	
4-Chlorophenyl Phenyl Ether							0	
Chrysene							0	
Dibenzo(a,h)anthracene							0	
1,2-Dichlorobenzene							0	
1,3-Dichlorobenzene							0	
1,4-Dichlorobenzene							0	
3,3'-Dichlorobenzidine							0	
Diethyl Phthalate							0	
Dimethyl Phthalate	X	X					0	
Di-N-Butyl Phthalate							0	
2,4-Dinitrotoluene							0	
2,6-Dinitrotoluene							0	
Di-N-Octyphthalate							0	
1,2-Diphenylhydrazine (as Azobenzene)							0	
Fluroranthene							0	
Fluorene							0	
Hexachlorobenzene							0	
Hexachlorobutadiene							0	
Hexachloroethane							0	
Indeno(1,2,3-cd)pyrene							0	
Isophorone							0	
Napthalene							0	
Nitrobenzene							0	
N-Nitrosodimethylamine							0	
N-Nitrosodi-N-Propylamine							0	
N-Nitrosodiphenylamine							0	
Phenanthrene							0	
Pyrene							0	
1,2,4-Trichlorobenzene							0	
Aldrin							0	
Alpha-BHC							0	
Beta-BHC							0	
Gamma-BHC							0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 002

Pollutant	Believed Present	Testing Required	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Delta-BHC							0	
Chlordane							0	
4,4'-DDT							0	
4,4'-DDE							0	
4,4'-DDD							0	
Dieldrin							0	
Alpha-Endosulfan							0	
Beta-Endosulfan							0	
Endosulfan Sulfate							0	
Endrin							0	
Endrin Aldehyde							0	
Heptachlor							0	
Heptachlor Epoxide							0	
PCB-1242							0	
PCB 1254							0	
PCB-1221							0	
PCB-1232							0	
PCB-1248							0	
PCB-1260							0	
PCB-1016							0	
Toxaphene							0	
Table 2F-4								
Asbestos							0	
Acetaldehyde	X	X					0	
Allyl alcohol							0	
Allyl chloride							0	
Amyl acetate							0	
Aniline							0	
Benzonitrile							0	
Benzyl chloride	X	X					0	
Butyl acetate							0	
Butylamine							0	
Carbaryl							0	
Carbofuran							0	
Carbon disulfide							0	
Chlorpyrifos							0	
Coumaphos							0	
Cresol							0	
Crotonaldehyde							0	
Cyclohexane	X	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)							0	
Diazinon							0	
Dicamba							0	
Dichlobenil							0	
Dichlone							0	
2,2-Dichloropropionic acid							0	
Dichlorvos							0	
Diethyl amine							0	
Dimethyl amine							0	
Dinitrobenzene							0	
Diquat							0	
Disulfoton							0	
Diuron							0	
Epichlorohydrin							0	
Ethion							0	
Ethylene diamine	X	X					0	
Ethylene dibromide							0	
Formaldehyde	X	X					0	
Furfural							0	
Guthion							0	
Isoprene							0	
Isopropanolamine							0	
Kelthane							0	
Kepone							0	
Malathion							0	
Mercaptodimethur							0	
Methoxychlor							0	
Methyl mercaptan							0	
Methyl methacrylate	X	X					0	
Methyl parathion							0	
Mevinphos							0	
Mexacarbate							0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 002

Pollutant	Believed Present	Testing Required	Max Values		Avg Values		No. Storm Events Sampled	Units
			Initial Grab	Flow-Weighted Composite	Initial Grab	Flow-Weighted Composite		
Monoethyl amine							0	
Monomethyl amine	X	X					0	
Naled							0	
Napthenic acid							0	
Nitrotoluene							0	
Parathion							0	
Phenolsulfonate	X	X					0	
Phosgene	X	X					0	
Propargite							0	
Propylene oxide							0	
Pyrethrins							0	
Quinoline							0	
Resorcinol							0	
Stronthium							0	
Strychnine							0	
Styrene	X	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)							0	
TDE (Tetrachlorodiphenyl ethane)							0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]							0	
Trichlorofan							0	
Triethylamine	X	X					0	
Trimethylamine							0	
Uranium							0	
Vanadium							0	
Vinyl acetate	X	X					0	
Xylene	X	X					0	
Xylenol							0	
Zirconium							0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 003

	Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	Required Parameters							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	
	COD	NA	37.3		16.9		14	mg/L
	TSS	NA	53.6		16.9		14	mg/L
	Total Nitrogen	NA					0	
	Total Phosphorus	NA					0	
	pH	NA	7.9		7.3		14	SU
Part B	Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001 and A01)							
	TOC	NA	14		7.1		14	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)	See Attachment 2C-4						
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)							
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 003

	Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
	Diethyl Phthalate	NA					0	
	Dimethyl phthalate	NA					0	
	Benzo(a) anthracene	NA					0	
	Benzo(a) pyrene	NA					0	
	Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
	Benzo(k) fluoranthene	NA					0	
	Chrysene	NA					0	
	Acenaphthylene	NA					0	
	Anthracene	NA					0	
	Fluorene	NA					0	
	Phenanthrene	NA					0	
	Pyrene	NA					0	
	Tetrachloroethylene (Tetrachlorethene)	NA					0	
	Toluene	NA	0		0		12	ug/L
	Trichloroethylene (Trichlorethene)	NA					0	
	Vinyl chloride	NA					0	
	Cyanide, Total	NA					0	
Part C	**Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**							
	Table 2F-2						0	
	Bromide						0	
	Chlorine, Total Residual						0	
	Color						0	
	Fecal Coliform						0	
	Fluoride	X					0	
	Nitrate-Nitrite						0	
	Nitrogen, Total Organic						0	
	Oil and Grease	X					0	
	Phosphorus, Total	X					0	
	Radioactivity						0	
	Sulfate	X					0	
	Sulfite	X					0	
	Surfactants	X					0	
	Aluminum, Total						0	
	Barium, Total	X					0	
	Boron, Total						0	
	Cobalt Total	X					0	
	Iron, Total	X					0	
	Magnesium, Total						0	
	Molybdenum, Total	X					0	
	Manganese, Total	X					0	
	Tin, Total	X					0	
	Titanium, Total						0	
	Table 2F-3							
	Antimony, Total	X					0	
	Arsenic, Total						0	
	Beryllium, Total						0	
	Cadmium, Total						0	
	Chromium, Total						0	
	Copper, Total	X					0	
	Lead, Total	X					0	
	Mercury, Total	X					0	
	Nickel, Total						0	
	Selenium, Total						0	
	Silver, Total						0	
	Thallium, Total						0	
	Zinc, Total	X					0	
	Cyanide, Total						0	
	Phenols, Total	X					0	
	Acrolein						0	
	Acrylonitrile						0	
	Benzene						0	
	Bromoform						0	
	Carbon Tetrachloride						0	
	Chlorobenzene						0	
	Chlorodibromomethane						0	
	Chloroethane						0	
	2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 003

EPA ID # AL0000205

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 003

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 003

Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 004

	Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	**Required Parameters**							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	mg/L
	COD	NA	53.1		20.7		13	mg/L
	TSS	NA	441		97.7		13	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	8.1		7.4		13	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001 and A01)**							
	TOC	NA	23.3		9.42		13	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)	See Attachment 2C-4						
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)							
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 004

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Diethyl Phthalate	NA					0	
Dimethyl phthalate	NA					0	
Benzo(a) anthracene	NA					0	
Benzo(a) pyrene	NA					0	
Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
Benzo(k) fluoranthene	NA					0	
Chrysene	NA					0	
Acenaphthylene	NA					0	
Anthracene	NA					0	
Fluorene	NA					0	
Phenanthrene	NA					0	
Pyrene	NA					0	
Tetrachloroethylene (Tetrachlorethene)	NA					0	
Toluene	NA	17.4		1.34		13	ug/L
Trichloroethylene (Trichlorethene)	NA					0	
Vinyl chloride	NA					0	
Cyanide, Total	NA					0	
Part C Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)							
Table 2F-2						0	
Bromide						0	
Chlorine, Total Residual						0	
Color						0	
Fecal Coliform						0	
Fluoride	X					0	
Nitrate-Nitrite						0	
Nitrogen, Total Organic						0	
Oil and Grease	X					0	
Phosphorus, Total	X					0	
Radioactivity						0	
Sulfate	X					0	
Sulfite	X					0	
Surfactants	X					0	
Aluminum, Total						0	
Barium, Total	X					0	
Boron, Total						0	
Cobalt Total	X					0	
Iron, Total	X					0	
Magnesium, Total						0	
Molybdenum, Total	X					0	
Manganese, Total	X					0	
Tin, Total	X					0	
Titanium, Total						0	
Table 2F-3							
Antimony, Total	X					0	
Arsenic, Total						0	
Beryllium, Total						0	
Cadmium, Total						0	
Chromium, Total						0	
Copper, Total	X					0	
Lead, Total	X					0	
Mercury, Total	X					0	
Nickel, Total						0	
Selenium, Total						0	
Silver, Total						0	
Thallium, Total						0	
Zinc, Total	X					0	
Cyanide, Total						0	
Phenols, Total	X					0	
Acrolein						0	
Acrylonitrile						0	
Benzene						0	
Bromoform						0	
Carbon Tetrachloride						0	
Chlorobenzene						0	
Chlorodibromomethane						0	
Chloroethane						0	
2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 004

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 004

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 004

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 005

Part	Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	**Required Parameters**							
	O&G	NA	0		0		11	mg/L
	BOD5	NA					0	mg/L
	COD	NA	452		53.2		13	mg/L
	TSS	NA	132		49.7		13	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	8.0		7.3		13	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001 and A01)**							
	TOC	NA	142		27.1		13	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)							
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)	See Attachment 2C-4						
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 005

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Diethyl Phthalate	NA					0	
Dimethyl phthalate	NA					0	
Benzo(a) anthracene	NA					0	
Benzo(a) pyrene	NA					0	
Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
Benzo(k) fluoranthene	NA					0	
Chrysene	NA					0	
Acenaphthylene	NA					0	
Anthracene	NA					0	
Fluorene	NA					0	
Phenanthrene	NA					0	
Pyrene	NA					0	
Tetrachloroethylene (Tetrachlorethene)	NA					0	
Toluene	NA	18.6		1.55		12	ug/L
Trichloroethylene (Trichlorethene)	NA					0	
Vinyl chloride	NA					0	
Cyanide, Total	NA					0	
Part C **Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**							
Table 2F-2						0	
Bromide						0	
Chlorine, Total Residual						0	
Color						0	
Fecal Coliform						0	
Fluoride	X					0	
Nitrate-Nitrite						0	
Nitrogen, Total Organic						0	
Oil and Grease	X					0	
Phosphorus, Total	X					0	
Radioactivity						0	
Sulfate	X					0	
Sulfite	X					0	
Surfactants	X					0	
Aluminum, Total						0	
Barium, Total	X					0	
Boron, Total						0	
Cobalt Total	X					0	
Iron, Total	X					0	
Magnesium, Total						0	
Molybdenum, Total	X					0	
Manganese, Total	X					0	
Tin, Total	X					0	
Titanium, Total						0	
Table 2F-3							
Antimony, Total	X					0	
Arsenic, Total						0	
Beryllium, Total						0	
Cadmium, Total						0	
Chromium, Total						0	
Copper, Total	X					0	
Lead, Total	X					0	
Mercury, Total	X					0	
Nickel, Total						0	
Selenium, Total						0	
Silver, Total						0	
Thallium, Total						0	
Zinc, Total	X					0	
Cyanide, Total						0	
Phenols, Total	X					0	
Acrolein						0	
Acrylonitrile						0	
Benzene						0	
Bromoform						0	
Carbon Tetrachloride						0	
Chlorobenzene						0	
Chlorodibromomethane						0	
Chloroethane						0	
2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 005

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 005

Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 005

Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 006

	Pollutant	Believed Present	Max Values		Avg Values		No. Storm Events Sampled	Units
			Initial Grab	Flow-Weighted Composite	Initial Grab	Flow-Weighted Composite		
Part A	**Required Parameters**							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	mg/L
	COD	NA	445		57.5		13	mg/L
	TSS	NA	141		42.3		13	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	8.0		7.3		13	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001 and A01)**							
	TOC	NA	141		26.1		13	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)							
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)				See Attachment 2C-4			
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 006

Pollutant		Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
	Diethyl Phthalate	NA					0	
	Dimethyl phthalate	NA					0	
	Benzo(a) anthracene	NA					0	
	Benzo(a) pyrene	NA					0	
	Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
	Benzo(k) fluoranthene	NA					0	
	Chrysene	NA					0	
	Acenaphthylene	NA					0	
	Anthracene	NA					0	
	Fluorene	NA					0	
	Phenanthrene	NA					0	
	Pyrene	NA					0	
	Tetrachloroethylene (Tetrachlorethene)	NA					0	
	Toluene	NA	17.8		1.92		13	ug/L
	Trichloroethylene (Trichlorethene)	NA					0	
	Vinyl chloride	NA					0	
	Cyanide, Total	NA					0	
Part C	**Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**							
	Table 2F-2						0	
	Bromide						0	
	Chlorine, Total Residual						0	
	Color						0	
	Fecal Coliform						0	
	Fluoride	X					0	
	Nitrate-Nitrite						0	
	Nitrogen, Total Organic						0	
	Oil and Grease	X					0	
	Phosphorus, Total	X					0	
	Radioactivity						0	
	Sulfate	X					0	
	Sulfite	X					0	
	Surfactants	X					0	
	Aluminum, Total						0	
	Barium, Total	X					0	
	Boron, Total						0	
	Cobalt Total	X					0	
	Iron, Total	X					0	
	Magnesium, Total						0	
	Molybdenum, Total	X					0	
	Manganese, Total	X					0	
	Tin, Total	X					0	
	Titanium, Total						0	
	Table 2F-3							
	Antimony, Total	X					0	
	Arsenic, Total						0	
	Beryllium, Total						0	
	Cadmium, Total						0	
	Chromium, Total						0	
	Copper, Total	X					0	
	Lead, Total	X					0	
	Mercury, Total	X					0	
	Nickel, Total						0	
	Selenium, Total						0	
	Silver, Total						0	
	Thallium, Total						0	
	Zinc, Total	X					0	
	Cyanide, Total						0	
	Phenols, Total	X					0	
	Acrolein						0	
	Acrylonitrile						0	
	Benzene						0	
	Bromoform						0	
	Carbon Tetrachloride						0	
	Chlorobenzene						0	
	Chlorodibromomethane						0	
	Chloroethane						0	
	2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 006

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 006

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 006

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 007

	Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	**Required Parameters**							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	mg/L
	COD	NA	259		37.5		14	mg/L
	TSS	NA	300		105		14	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	8.1		7.3		14	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001 and A01)**							
	TOC	NA	62.9		11.2		14	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)	See Attachment 2C-4						
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)							
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 007

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Diethyl Phthalate	NA					0	
Dimethyl phthalate	NA					0	
Benzo(a) anthracene	NA					0	
Benzo(a) pyrene	NA					0	
Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
Benzo(k) fluoranthene	NA					0	
Chrysene	NA					0	
Acenaphthylene	NA					0	
Anthracene	NA					0	
Fluorene	NA					0	
Phenanthrene	NA					0	
Pyrene	NA					0	
Tetrachloroethylene (Tetrachlorethene)	NA					0	
Toluene	NA	0		0		12	ug/L
Trichloroethylene (Trichlorethene)	NA					0	
Vinyl chloride	NA					0	
Cyanide, Total	NA					0	
Part C Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)							
Table 2F-2						0	
Bromide						0	
Chlorine, Total Residual						0	
Color						0	
Fecal Coliform						0	
Fluoride	X					0	
Nitrate-Nitrite						0	
Nitrogen, Total Organic						0	
Oil and Grease	X					0	
Phosphorus, Total	X					0	
Radioactivity						0	
Sulfate	X					0	
Sulfite	X					0	
Surfactants	X					0	
Aluminum, Total						0	
Barium, Total	X					0	
Boron, Total						0	
Cobalt Total	X					0	
Iron, Total	X					0	
Magnesium, Total						0	
Molybdenum, Total	X					0	
Manganese, Total	X					0	
Tin, Total	X					0	
Titanium, Total						0	
Table 2F-3							
Antimony, Total	X					0	
Arsenic, Total						0	
Beryllium, Total						0	
Cadmium, Total						0	
Chromium, Total						0	
Copper, Total	X					0	
Lead, Total	X					0	
Mercury, Total	X					0	
Nickel, Total						0	
Selenium, Total						0	
Silver, Total						0	
Thallium, Total						0	
Zinc, Total	X					0	
Cyanide, Total						0	
Phenols, Total	X					0	
Acrolein						0	
Acrylonitrile						0	
Benzene						0	
Bromoform						0	
Carbon Tetrachloride						0	
Chlorobenzene						0	
Chlorodibromomethane						0	
Chloroethane						0	
2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

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Attachment 2F-5: Discharge Information
DSN 007

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 007

Pollutant		Max Values		Avg Values			
	Believed Present	Initial Grab	Flow-Weighted Composite	Initial Grab	Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

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Attachment 2F-5: Discharge Information
DSN 007

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings

Attachment 2F-5: Discharge Information
DSN 008

	Pollutant	Believed Present	Max Values		Avg Values		No. Storm Events Sampled	Units
			Initial Grab	Flow-Weighted Composite	Initial Grab	Flow-Weighted Composite		
Part A	**Required Parameters**							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	mg/L
	COD	NA	84.7		25.0		14	mg/L
	TSS	NA	203		52.6		14	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	8.2		7.1		14	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001 and A01)**							
	TOC	NA	46.2		10.5		14	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)	See Attachment 2C-4						
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)							
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 008

	Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
	Diethyl Phthalate	NA					0	
	Dimethyl phthalate	NA					0	
	Benzo(a) anthracene	NA					0	
	Benzo(a) pyrene	NA					0	
	Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
	Benzo(k) fluoranthene	NA					0	
	Chrysene	NA					0	
	Acenaphthylene	NA					0	
	Anthracene	NA					0	
	Fluorene	NA					0	
	Phenanthrene	NA					0	
	Pyrene	NA					0	
	Tetrachloroethylene (Tetrachlorethene)	NA					0	
	Toluene	NA	0		0		12	ug/L
	Trichloroethylene (Trichlorethene)	NA					0	
	Vinyl chloride	NA					0	
	Cyanide, Total	NA					0	
Part C	**Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**							
	Table 2F-2						0	
	Bromide						0	
	Chlorine, Total Residual						0	
	Color						0	
	Fecal Coliform						0	
	Fluoride	X					0	
	Nitrate-Nitrite						0	
	Nitrogen, Total Organic						0	
	Oil and Grease	X					0	
	Phosphorus, Total	X					0	
	Radioactivity						0	
	Sulfate	X					0	
	Sulfite	X					0	
	Surfactants	X					0	
	Aluminum, Total						0	
	Barium, Total	X					0	
	Boron, Total						0	
	Cobalt Total	X					0	
	Iron, Total	X					0	
	Magnesium, Total						0	
	Molybdenum, Total	X					0	
	Manganese, Total	X					0	
	Tin, Total	X					0	
	Titanium, Total						0	
	Table 2F-3							
	Antimony, Total	X					0	
	Arsenic, Total						0	
	Beryllium, Total						0	
	Cadmium, Total						0	
	Chromium, Total						0	
	Copper, Total	X					0	
	Lead, Total	X					0	
	Mercury, Total	X					0	
	Nickel, Total						0	
	Selenium, Total						0	
	Silver, Total						0	
	Thallium, Total						0	
	Zinc, Total	X					0	
	Cyanide, Total						0	
	Phenols, Total	X					0	
	Acrolein						0	
	Acrylonitrile						0	
	Benzene						0	
	Bromoform						0	
	Carbon Tetrachloride						0	
	Chlorobenzene						0	
	Chlorodibromomethane						0	
	Chloroethane						0	
	2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 008

Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 008

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 008

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 009

	Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	Required Parameters							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	mg/L
	COD	NA	372		51.0		14	mg/L
	TSS	NA	1630		169		14	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	8.1		7.2		14	SU
Part B	Pollutants included in facility effluent guidelines, or listed in NPDES permit (							
	TOC	NA	23.1		11.5		14	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)	See Attachment 2C-4						
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)							
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 009

	Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
	Diethyl Phthalate	NA					0	
	Dimethyl phthalate	NA					0	
	Benzo(a) anthracene	NA					0	
	Benzo(a) pyrene	NA					0	
	Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
	Benzo(k) fluoranthene	NA					0	
	Chrysene	NA					0	
	Acenaphthylene	NA					0	
	Anthracene	NA					0	
	Fluorene	NA					0	
	Phenanthrene	NA					0	
	Pyrene	NA					0	
	Tetrachloroethylene (Tetrachlorethene)	NA					0	
	Toluene	NA	0		0		12	ug/L
	Trichloroethylene (Trichlorethene)	NA					0	
	Vinyl chloride	NA					0	
	Cyanide, Total	NA					0	
Part C	**Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**							
	Table 2F-2						0	
	Bromide						0	
	Chlorine, Total Residual						0	
	Color						0	
	Fecal Coliform						0	
	Fluoride	X					0	
	Nitrate-Nitrite						0	
	Nitrogen, Total Organic						0	
	Oil and Grease	X					0	
	Phosphorus, Total	X					0	
	Radioactivity						0	
	Sulfate	X					0	
	Sulfite	X					0	
	Surfactants	X					0	
	Aluminum, Total						0	
	Barium, Total	X					0	
	Boron, Total						0	
	Cobalt Total	X					0	
	Iron, Total	X					0	
	Magnesium, Total						0	
	Molybdenum, Total	X					0	
	Manganese, Total	X					0	
	Tin, Total	X					0	
	Titanium, Total						0	
	Table 2F-3							
	Antimony, Total	X					0	
	Arsenic, Total						0	
	Beryllium, Total						0	
	Cadmium, Total						0	
	Chromium, Total						0	
	Copper, Total	X					0	
	Lead, Total	X					0	
	Mercury, Total	X					0	
	Nickel, Total						0	
	Selenium, Total						0	
	Silver, Total						0	
	Thallium, Total						0	
	Zinc, Total	X					0	
	Cyanide, Total						0	
	Phenols, Total	X					0	
	Acrolein						0	
	Acrylonitrile						0	
	Benzene						0	
	Bromoform						0	
	Carbon Tetrachloride						0	
	Chlorobenzene						0	
	Chlorodibromomethane						0	
	Chloroethane						0	
	2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 009

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 009

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 009

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 011

	Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	**Required Parameters**							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	mg/L
	COD	NA	444		59.0		14	mg/L
	TSS	NA	597		71.2		14	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	7.6		7.1		14	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit (**							
	TOC	NA	34.2		13.8		14	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluorooctanoic Acid (PFOA)	See Attachment 2C-4						
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)							
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 011

EPA ID # AL0000205

Pollutant		Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
	Diethyl Phthalate	NA					0	
	Dimethyl phthalate	NA					0	
	Benzo(a) anthracene	NA					0	
	Benzo(a) pyrene	NA					0	
	Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
	Benzo(k) fluoranthene	NA					0	
	Chrysene	NA					0	
	Acenaphthylene	NA					0	
	Anthracene	NA					0	
	Fluorene	NA					0	
	Phenanthrene	NA					0	
	Pyrene	NA					0	
	Tetrachloroethylene (Tetrachlorethene)	NA					0	
	Toluene	NA	0		0		12	ug/L
	Trichloroethylene (Trichlorethene)	NA					0	
	Vinyl chloride	NA					0	
	Cyanide, Total	NA					0	
Part C	**Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**							
	Table 2F-2						0	
	Bromide						0	
	Chlorine, Total Residual						0	
	Color						0	
	Fecal Coliform						0	
	Fluoride	X					0	
	Nitrate-Nitrite						0	
	Nitrogen, Total Organic						0	
	Oil and Grease	X					0	
	Phosphorus, Total	X					0	
	Radioactivity						0	
	Sulfate	X					0	
	Sulfite	X					0	
	Surfactants	X					0	
	Aluminum, Total						0	
	Barium, Total	X					0	
	Boron, Total						0	
	Cobalt Total	X					0	
	Iron, Total	X					0	
	Magnesium, Total						0	
	Molybdenum, Total	X					0	
	Manganese, Total	X					0	
	Tin, Total	X					0	
	Titanium, Total						0	
	Table 2F-3							
	Antimony, Total	X					0	
	Arsenic, Total						0	
	Beryllium, Total						0	
	Cadmium, Total						0	
	Chromium, Total						0	
	Copper, Total	X					0	
	Lead, Total	X					0	
	Mercury, Total	X					0	
	Nickel, Total						0	
	Selenium, Total						0	
	Silver, Total						0	
	Thallium, Total						0	
	Zinc, Total	X					0	
	Cyanide, Total						0	
	Phenols, Total	X					0	
	Acrolein						0	
	Acrylonitrile						0	
	Benzene						0	
	Bromoform						0	
	Carbon Tetrachloride						0	
	Chlorobenzene						0	
	Chlorodibromomethane						0	
	Chloroethane						0	
	2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 011

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 011

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB-1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 011

Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 012

	Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Part A	**Required Parameters**							
	O&G	NA	0		0		12	mg/L
	BOD5	NA					0	mg/L
	COD	NA	76.7		29.5		14	mg/L
	TSS	NA	201		47.9		14	mg/L
	Total Nitrogen	NA					0	mg/L
	Total Phosphorus	NA					0	mg/L
	pH	NA	8.8		7.1		14	SU
Part B	**Pollutants included in facility effluent guidelines, or listed in NPDES permit for process wastewater (i.e. Outfalls 001 and A01)**							
	TOC	NA	24.2		11.1		14	mg/L
	Ammonia	NA					0	
	TKN	NA					0	
	Nitrate-Nitrite	NA					0	
	Fluoride	NA					0	
	E.coli	NA					0	
	Chromium, Total	NA					0	
	Copper, Total	NA					0	
	Lead, Total	NA					0	
	Nickel, Total	NA					0	
	Zinc, Total	NA					0	
	Perfluoroctanoic Acid (PFOA)							
	Perfluorobutanoic Acid (PFBA)							
	Perfluorobutanesulfonamide (PFBSA)							
	Perfluorooctanesulfonamide (PFOSA)							
	Perfluorooctanesulfonate (PFOS)							
	Perfluorohexanoic Acid (PFHxA)				**See Attachment 2C-4**			
	Perfluoroheptanoic Acid (PFHpA)							
	Perfluorobutanesulfonate (PFBS)							
	Perfluorohexanesulfonate (PFHS)							
	2-(N-ethyl-PFOSA) acetic acid							
	2-(N-methyl-PFOSA) acetic acid							
	Acenaphthene	NA					0	
	Acrylonitrile	NA					0	
	Benzene	NA					0	
	Carbon tetrachloride	NA					0	
	Chlorobenzene	NA					0	
	1,2,4-trichlorobenzene	NA					0	
	Hexachlorobenzene	NA					0	
	1,2-dichloroethane	NA					0	
	1,1,1-trichloroethane	NA					0	
	Hexachloroethane	NA					0	
	1,1-dichloroethane	NA					0	
	1,1,2-trichloroethane	NA					0	
	Chloroethane	NA					0	
	Chloroform	NA					0	
	1,2-dichlorobenzene	NA					0	
	1,3-dichlorobenzene	NA					0	
	1,4-dichlorobenzene	NA					0	
	1,1-dichloroethylene (1,1-dichloroethene)	NA					0	
	1,2-trans-dichloroethylene (trans-1,2-dichloroethene)	NA					0	
	1,2-dichloropropane	NA					0	
	1,3-dichloropropylene (cis- and trans-1,3-dichloropropene)	NA					0	
	2,4-dimethylphenol	NA					0	
	Ethylbenzene	NA					0	
	Fluoranthene	NA					0	
	Methylene chloride (Dichloromethane)	NA					0	
	Methyl chloride (Chloromethane)	NA					0	
	Hexachlorobutadiene	NA					0	
	Naphthalene	NA					0	
	Nitrobenzene	NA					0	
	2-nitrophenol	NA					0	
	4-nitrophenol	NA					0	
	2,4-dinitrophenol	NA					0	
	4,6-dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	NA					0	
	Phenol	NA					0	
	Bis(2-ethylhexyl) phthalate	NA					0	
	Di-n-Butyl Phthalate	NA					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 012

	Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
	Diethyl Phthalate	NA					0	
	Dimethyl phthalate	NA					0	
	Benzo(a) anthracene	NA					0	
	Benzo(a) pyrene	NA					0	
	Benzo(b) fluoranthene (3,4-Benzofluoranthene)	NA					0	
	Benzo(k) fluoranthene	NA					0	
	Chrysene	NA					0	
	Acenaphthylene	NA					0	
	Anthracene	NA					0	
	Fluorene	NA					0	
	Phenanthrene	NA					0	
	Pyrene	NA					0	
	Tetrachloroethylene (Tetrachlorethene)	NA					0	
	Toluene	NA	0		0		12	ug/L
	Trichloroethylene (Trichlorethene)	NA					0	
	Vinyl chloride	NA					0	
	Cyanide, Total	NA					0	
Part C	**Pollutants known or believed to be present (and listed in Tables 2F-2, 2F-3, and 2F-4)**							
	Table 2F-2						0	
	Bromide						0	
	Chlorine, Total Residual						0	
	Color						0	
	Fecal Coliform						0	
	Fluoride	X					0	
	Nitrate-Nitrite						0	
	Nitrogen, Total Organic						0	
	Oil and Grease	X					0	
	Phosphorus, Total	X					0	
	Radioactivity						0	
	Sulfate	X					0	
	Sulfite	X					0	
	Surfactants	X					0	
	Aluminum, Total						0	
	Barium, Total	X					0	
	Boron, Total						0	
	Cobalt Total	X					0	
	Iron, Total	X					0	
	Magnesium, Total						0	
	Molybdenum, Total	X					0	
	Manganese, Total	X					0	
	Tin, Total	X					0	
	Titanium, Total						0	
	Table 2F-3							
	Antimony, Total	X					0	
	Arsenic, Total						0	
	Beryllium, Total						0	
	Cadmium, Total						0	
	Chromium, Total						0	
	Copper, Total	X					0	
	Lead, Total	X					0	
	Mercury, Total	X					0	
	Nickel, Total						0	
	Selenium, Total						0	
	Silver, Total						0	
	Thallium, Total						0	
	Zinc, Total	X					0	
	Cyanide, Total						0	
	Phenols, Total	X					0	
	Acrolein						0	
	Acrylonitrile						0	
	Benzene						0	
	Bromoform						0	
	Carbon Tetrachloride						0	
	Chlorobenzene						0	
	Chlorodibromomethane						0	
	Chloroethane						0	
	2-Chloroethylvinyl Ether						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

EPA ID # AL0000205

Attachment 2F-5: Discharge Information
DSN 012

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Chloroform						0	
Dichlorobromomethane						0	
1,1-Dichloroethane						0	
1,2-Dichloroethane	X					0	
1,1-Dichloroethylene						0	
1,2-Dichloropropane						0	
1,3-Dichloropropylene						0	
Ethylbenzene	X					0	
Methyl Bromide						0	
Methyl Chloride						0	
Methylene Chloride						0	
1,1,2,2,-Tetrachloroethane						0	
Tetrachloroethylene						0	
Toluene	X					0	
1,2-Trans-Dichloroethylene						0	
1,1,1-Trichloroethane						0	
1,1,2-Trichloroethane						0	
Trichloroethylene						0	
Vinyl Chloride						0	
2-Chlorophenol						0	
2,4-Dichlorophenol						0	
2,4-Dimethylphenol						0	
4,6-Dinitro-O-Cresol						0	
2,4-Dinitrophenol						0	
2-Nitrophenol						0	
4-Nitrophenol						0	
p-Chloro-M-Cresol						0	
Pentachlorophenol						0	
Phenol	X					0	
2,4,6-Trichlorophenol						0	
2-methyl-4,6 dinitrophenol						0	
Acenaphthene						0	
Acenaphthylene						0	
Anthracene						0	
Benzidine						0	
Benzo(a)anthracene						0	
Benzo(a)pyrene						0	
3,4-Benzofluoranthene						0	
Benzo(ghi)perylene						0	
Benzo(k)fluoranthene						0	
Bis(2-chloroethoxy)methane						0	
Bis(2-chloroethyl)ether						0	
Bis(2-chloroisopropyl)ether						0	
Bis(2-ethylyhexyl)phthalate						0	
4-Bromophenyl Phenyl Ether						0	
Butylbenzyl Phthalate						0	
2-Chloronaphthalene						0	
4-Chlorophenyl Phenyl Ether						0	
Chrysene						0	
Dibenzo(a,h)anthracene						0	
1,2-Dichlorobenzene						0	
1,3-Dichlorobenzene						0	
1,4-Dichlorobenzene						0	
3,3'-Dichlorobenzidine						0	
Diethyl Phthalate						0	
Dimethyl Phthalate	X					0	
Di-N-Butyl Phthalate						0	
2,4-Dinitrotoluene						0	
2,6-Dinitrotoluene						0	
Di-N-Octyphthalate						0	
1,2-Diphenylhydrazine (as Azobenzene)						0	
Fluroranthene						0	
Fluorene						0	
Hexachlorobenzene						0	
Hexachlorobutadiene						0	
Hexachloroethane						0	
Indeno(1,2,3-cd)pyrene						0	
Isophorone						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 012

Pollutant	Believed Present	Max Values Initial Grab	Max Values Flow-Weighted Composite	Avg Values Initial Grab	Avg Values Flow-Weighted Composite	No. Storm Events Sampled	Units
Napthalene						0	
Nitrobenzene						0	
N-Nitrosodimethylamine						0	
N-Nitrosodi-N-Propylamine						0	
N-Nitrosodiphenylamine						0	
Phenanthrene						0	
Pyrene						0	
1,2,4-Trichlorobenzene						0	
Aldrin						0	
Alpha-BHC						0	
Beta-BHC						0	
Gamma-BHC						0	
Delta-BHC						0	
Chlordane						0	
4,4'-DDT						0	
4,4'-DDE						0	
4,4'-DDD						0	
Dieldrin						0	
Alpha-Endosulfan						0	
Beta-Endosulfan						0	
Endosulfan Sulfate						0	
Endrin						0	
Endrin Aldehyde						0	
Heptachlor						0	
Heptachlor Epoxide						0	
PCB-1242						0	
PCB-1254						0	
PCB-1221						0	
PCB 1232						0	
PCB-1248						0	
PCB-1260						0	
PCB-1016						0	
Toxaphene						0	
Table 2F-4							
Asbestos						0	
Acetaldehyde	X					0	
Allyl alcohol						0	
Allyl chloride						0	
Amyl acetate						0	
Aniline						0	
Benzonitrile						0	
Benzyl chloride	X					0	
Butyl acetate						0	
Butylamine						0	
Carbaryl						0	
Carbofuran						0	
Carbon disulfide						0	
Chlorpyrifos						0	
Coumaphos						0	
Cresol						0	
Crotonaldehyde						0	
Cyclohexane	X					0	
2,4-D (2,4-Dichlorophenoxyacetic acid)						0	
Diazinon						0	
Dicamba						0	
Dichlobenil						0	
Dichlone						0	
2,2-Dichloropropionic acid						0	
Dichlorvos						0	
Diethyl amine						0	
Dimethyl amine						0	
Dinitrobenzene						0	
Diquat						0	
Disulfoton						0	
Diuron						0	
Epichlorohydrin						0	
Ethion						0	
Ethylene diamine	X					0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Attachment 2F-5: Discharge Information
DSN 012

EPA ID # AL0000205

Pollutant	Believed Present	Max Values: Initial Grab	Max Values: Flow-Weighted Composite	Avg Values: Initial Grab	Avg Values: Flow-Weighted Composite	No. Storm Events Sampled	Units
Ethylene dibromide						0	
Formaldehyde	X					0	
Furfural						0	
Guthion						0	
Isoprene						0	
Isopropanolamine						0	
Kelthane						0	
Kepone						0	
Malathion						0	
Mercaptodimethur						0	
Methoxychlor						0	
Methyl mercaptan						0	
Methyl methacrylate	X					0	
Methyl parathion						0	
Mevinphos						0	
Mexacarbate						0	
Monoethyl amine						0	
Monomethyl amine	X					0	
Naled						0	
Napthenic acid						0	
Nitrotoluene						0	
Parathion						0	
Phenolsulfonate	X					0	
Phosgene	X					0	
Propargite						0	
Propylene oxide						0	
Pyrethrins						0	
Quinoline						0	
Resorcinol						0	
Stronthium						0	
Strychnine						0	
Styrene	X					0	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)						0	
TDE (Tetrachlorodiphenyl ethane)						0	
2,4,5-TP [2-(2,4,5-Trichlorophenoxy) propanoic acid]						0	
Trichlorofan						0	
Triethylamine	X					0	
Trimethylamine						0	
Uranium						0	
Vanadium						0	
Vinyl acetate	X					0	
Xylene	X					0	
Xylenol						0	
Zirconium						0	

Concentration values of "0" indicate results below detection limit.
Shaded rows indicate duplicate pollutant listings.

Jon T. Lindekugel
Senior Vice President

3M Supply Chain

3M Center, Building 220-14E-11
St. Paul, MN 55144-1000
651 737 6046 Office
jtlindekugelk@mmm.com

3M

To: Plant Managers/Facility Managers

From: Jon Lindekugel–Senior Vice President, 3M Supply Chain

Subject: Certifications Under Environmental, Health and Safety Laws

Date: October 20, 2017

As you are aware, Title V of the Clean Air Act Amendments of 1990 requires that most 3M facilities apply for and receive a Title V air permit. The Title V permit process is implemented through the respective state agency with jurisdiction over air permitting matters. Once the permit is issued, facilities must make certifications regarding its compliance status for the previous year with the Title V permit.

Some of these state laws implementing the Title V program require that filings and certifications be made by a corporate officer or someone delegated by a corporate officer. Other federal or state environmental, health and safety programs may also require that filings and certifications be made by a corporate officer or someone delegated by a corporate officer.

3M plant/facility managers are responsible for the overall control of the day-to-day operations at 3M facilities and, as such, are in the best position to make such certifications regarding the information submitted in Title V permit applications and the environmental, health and safety status of his/her particular facility.

In my capacity as a corporate officer of 3M, I delegate to plant/facility managers the responsibility to make Title V permit-related certifications and associated filings on behalf of each respective plant. I also delegate to plant/facility managers the authority to make other environmental, health and safety regulatory program-related certifications, permit applications and authorizations that may require filings and certifications be made by a corporate officer or someone delegated by a corporate officer. In making such certifications, please consult with your assigned Environment, Health & Safety plant contact or with Karna Peters in the Office of General Counsel.

Thank you,

Jon T. Lindekugel
Senior Vice President
3M Supply Chain
3M Center, 220-14E
St. Paul, MN 55144-1000

cc: Manufacturing Directors
John Ostergren, Director, EHS
Paul Narog, Manager, Environmental Operations
Karna Peters, Associate General Counsel, Supply Chain
EHS Plant Contacts

3M Decatur
NPDES Permit Renewal Application

Public Version

3M Decatur
Decatur, Alabama

Submittal Date: August 31, 2018

Permit Number: AL0000205

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3M Decatur
NPDES Permit Renewal Application

Basis for Confidentiality Claim

Decatur Alabama
August 2018

The information labeled as "3M CONFIDENTIAL" in this submittal relates to methods of manufacturing and processing which are unique to 3M Company. This trade secret information derives actual independent economic value from not being generally known to our competitors in the optical industry and others who could obtain economic value from the disclosure of such information. This information may include, but may not be limited to, the process flow diagram(s), process throughput(s), emission factor(s), and/or raw material application rate(s). Emission rates are not claimed as confidential.

"3M CONFIDENTIAL" information is customarily held in confidence and is not available for public viewing. 3M Company takes measures to protect the confidentiality of its trade secrets, including: (1) disclosure only to those 3M employees who have a need to know, and to other persons, such as vendors, who are under contractual obligation to hold the information in confidence; (2) controlled access to the 3M's facilities where the information is located and used, including but not limited to posted security guards at the entrance to 3M's facilities, the display of employee passes, and the escort of visitors to 3M's facilities; and, (3) all available legal measures to protect the confidential information concerning the processes utilized at its facilities from disclosure to third parties. These steps are regularly taken in filings made with governmental and regulatory agencies, and in dealings with 3M's customers and suppliers. 3M intends to continue to take these measures to protect confidential information.

Specific to this submittal, the following information has been claimed "3M CONFIDENTIAL":

i. Maximum Design Capacities

Disclosure of this information could be used by a competitor to determine the magnitude of 3M's business and 3M's manufacturing capabilities, and therefore could negatively impact 3M's competitive position.

ii. Emission Factors

Emission factors, when used with emission rate information, can be used to back-calculate the maximum design capacity of the associated equipment. Disclosure of the emission factors essentially provides disclosure of maximum design & production capacity information, which could be used by a competitor to determine the magnitude of 3M's business and 3M's manufacturing capability, and therefore could negatively impact 3M's competitive position.

iii. Facility and/or Process Flow Diagrams and/or Descriptions

This information could be used by a competitor to obtain information about the production methodology itself, specifically any proprietary steps 3M may use.

3M Decatur Plant

1400 State Docks Road
Decatur, AL 35601

3M

August 31, 2018

Sent Certified Mail
Return Receipt Requested

Alabama Department of Environmental Management
Attention: Mr. Theo Pinson
Water Division – Industrial Permit Section
1400 Coliseum Boulevard
Post Office Box 301463
Montgomery, Alabama 36130-1463

Subject: 3M Decatur – NPDES Permit Renewal Application (AL0000205)

Dear Mr. Pinson:

Please find attached two copies each of the public and confidential version of the completed NPDES permit renewal applications for the 3M Decatur facility. Included with these documents are ADEM Form 187 and EPA Forms 1, 2C, and 2F, along with referenced attachments. A check for $19,005 for the combined NPDES permit application fee is also enclosed.

As you will see in Form 2F of the permit application, 3M is requesting that several stormwater outfalls be added to the permit. 3M is also requesting that several other outfalls be removed from the permit. In general, the proposed stormwater outfall changes reflect the impact of ongoing remediation capping activities in the south fields, various plant-related construction projects, and the availability of an updated, higher resolution, site-wide topographic map. Table 1 summarizes the requested changes and the basis for the requests.

Table 1: Proposed Changes to Stormwater Outfalls

Outfall Number(s)	Request	Reason
DSN 007 DSN 008 DSN 010 DSN 011 DSN 012	Remove	Industrial activities no longer take place in these sub-watershed areas and construction of the multi-layer cap, in accordance with the NPDES Remedial Action Agreement, eliminates stormwater contact with former sludge incorporation areas
DSN 009	Remove	Soil excavation in the southwest corner of the site (capping related), has eliminated stormwater site drainage to this outfall, as shown on the site drainage map
DSN 014	Add	Higher resolution mapping capabilities
DSN 015	Add	Construction of hazardous material trailers storage containment system
DSN 016	Add	Construction of new process wastewater treatment system (fluoroelastomer wash water carbon)
DSN 017	Add	Higher resolution mapping capabilities
DSN 018	Add	Building expansion and drainage modifications

Notwithstanding our request to remove stormwater Outfalls DSN 007, 008, 010, 011, and 012 from the facility's NPDES permit, 3M proposes to continue to monitor these outfalls for perfluorinated substances to evaluate the effectiveness of the multi-layer cap.

Sampling, including screening for EPA priority pollutants, is underway as required for purposes of satisfying the requirements of Forms 2C and 2F of the permit application. Sampling of the process outfall DSN 001 has been completed and the results are included in Form 2C. Stormwater sampling will occur when there is a rain event which produces runoff that can be sampled. We will send the results of the stormwater outfall sampling to you as soon as they are available.

Form 2C, Part C does not list any perfluorinated and polyfluorinated substances (PFAS), formerly referred to as perfluorochemicals (PFCs). 3M's application, however, includes a summary of our monitoring under the existing permit for PFAS constituents. It also includes descriptions of current production operations with the potential to generate wastewater containing such substances and the substances expected to be present. We note in this regard that reliable quantification of those PFAS constituents in process wastewaters is limited by the currently available analytical methods and lack of analytical standards. As ADEM is aware, moreover, 3M Decatur is planning to install a granular activated carbon (GAC) treatment system for its fluoroelastomer wash water. 3M is also planning to install a GAC treatment system at the wastewater treatment plant. Both GAC systems are expected to begin operation in 2019. The installation of these GAC systems is expected to further reduce PFAS discharges to the chemical sewer.

Also enclosed are two copies of a report that includes information on the facility's cooling water intake structure, in compliance with 33 USC 1251, Section 316(b) regulations. This information satisfies the conditions described in Part IV.D. of the current NPDES permit and is required to be submitted 180 days prior to permit expiration.

If you have any questions regarding this application, please contact me at (256) 552-6300 or via email at mlhowell@mmm.com.

Sincerely,

Michelle Howell
Site Manager

Cc: Carie Mathison, 3M Corporate EHS
James Banks, 3M Decatur EHS
Stacee Bland, 3M Decatur EHS

Encl: NPDES Permit Renewal Application – Public Version (2 copies)
NPDES Permit Renewal Application – Confidential Version (2 copies)
Certified Check
316(b) Information: Cooling Water Intake Structure Submittal (2 copies)

WENCK File #0527-0438-0128
August 2018

316(b) Information: Cooling Water Intake Structure (CWIS) Data

Prepared for:

3M

3M Decatur
1400 State Docks Road
Decatur, Alabama 35601

WENCK
Responsive partner.
Exceptional outcomes.

Prepared by:

WENCK Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359
Phone: 763-479-4200
Fax: 763-479-4242

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TABLES

FIGURES

APPENDICES

1.0 Executive Summary

3M operates a cooling water intake structure (CWIS) at its facility in Decatur, Alabama. The facility has prepared this 316(b) information to determine compliance with the provisions set forth in the Clean Water Act (CWA), as amended in 33 US C1251 Section 316(b) regulations – Final Regulations To Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities (316 (b) or the Rule) that became effective on October 14, 2014.

The purpose of this document is to provide the Alabama Department of Environmental Management (ADEM) with the comprehensive application submittal required of the facility to comply with the 316(b) Rule. This document also satisfies the conditions described in Part IV.D of the facility's current National Pollutant Discharge Elimination System (NPDES) permit number AL0000205. The 316(b) regulations are intended to reduce impingement and entrainment of fish and other aquatic organisms at cooling water intake structures used by certain existing power generation and manufacturing facilities for the withdrawal of cooling water from waters of the United States.

To assist in characterizing the source water near the 3M CWIS, several studies published by the Tennessee Valley Authority (TVA) at its Browns Ferry Nuclear (BFN) Plant, also located on the Wheeler Reservoir, were reviewed. The area of Wheeler Reservoir near the 3M CWIS exhibits similar physical and biological characteristics as the area near the BFN Plant for the reasons listed below.

1. General proximity: The 3M CWIS is located just six miles upstream of the BFN Plant.
2. Dimensions: Similar cross-sectional areas.
3. Waterbody Classification: Both locations are within the same reach of the Tennessee River as assigned by ADEM for classification purposes.

Additionally, there is precedence for using data and studies characterizing a source water that are published by others for the purpose of satisfying the information requirements in 316(b).

The data presented in the reviewed TVA reports indicate that the fish community within the Wheeler Reservoir is stable and that the BFN Plant is not having an impact on the fish community within the reservoir. Given the following:

- The 3M CWIS has significantly less flow (approximately 0.2% to 0.5% of the BFN Plant cooling water flow),
- The 3M CWIS has a maximum design through-screen intake velocity of less than 0.5 feet per second,
- The location of the 3M CWIS in the same section of the Wheeler Reservoir as the BFN intake,
- The applicable inherent variation of the fish population within the Wheeler Reservoir,

it can also be concluded that the operation of the 3M CWIS is not measurably impacting the fish community within the reservoir.

2.0 Introduction

3M operates a cooling water intake structure (CWIS) at its facility in Decatur, Alabama. The facility has prepared this 316(b) information to determine compliance with the provisions set forth in the Clean Water Act (CWA), as amended in 33 US C1251 Section 316(b) regulations – Final Regulations To Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities (316 (b) or the Rule) that became effective on October 14, 2014.

The purpose of this document is to provide the Alabama Department of Environmental Management (ADEM) with the comprehensive application submittal required of the facility to comply with the 316(b) Rule. This document also satisfies the conditions described in Part IV.D of the facility's current National Pollutant Discharge Elimination System (NPDES) permit number AL0000205.

2.1 SECTION 316(B) REGULATORY OVERVIEW

The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. EPA has also set water quality standards for all contaminants in surface waters. EPA has given primacy to ADEM to issue NPDES permits that regulate industries that discharge pollutants to surface waters in Alabama.

According to the Federal Register, the purpose of 316(b) regulations is to reduce impingement and entrainment of fish and other aquatic organisms at cooling water intake structures used by certain existing power generation and manufacturing facilities for the withdrawal of cooling water from waters of the United States. This rule establishes requirements under section 316(b) of the Clean Water Act (CWA) for existing power generating facilities and existing manufacturing and industrial facilities that are designed to withdraw more than 2 million gallons per day (MGD) of water from waters of the United States and use at least 25 percent of the water they withdraw exclusively for cooling purposes. This regulation went into effect in October 14, 2014.

2.2 APPLICABILITY

3M utilizes a CWIS to withdraw water from the Tennessee River. Over the past three years, the CWIS has withdrawn approximately 4.35 MGD on average for 100 percent cooling purposes; therefore, 3M is subject to the 316(b) regulations.

2.3 DATA AVAILABILITY AND METHODOLOGY

To assist in characterizing the source water near the 3M CWIS, several studies published by the Tennessee Valley Authority (TVA) at its Browns Ferry Nuclear (BFN) Plant, also located on the Wheeler Reservoir, were reviewed and are incorporated by reference in three chapters of this report (2.0, 4.0, and 7.0). The 3M CWIS is located at Tennessee River Mile (TRM) 300 and the BFN Plant is located at TRM 294. The area of Wheeler Reservoir near the 3M CWIS is assumed to exhibit similar physical and biological characteristics as the area near the BFN Plant for the reasons listed below.

1. General proximity: The 3M CWIS is located just six miles upstream of the BFN Plant.
2. Dimensions: Similar cross-sectional areas.
3. Waterbody Classification: Both locations are within the same reach of the Tennessee River as assigned by ADEM for classification purposes.

Additionally, there is precedence for using data and studies characterizing a source water that are published by others for the purpose of satisfying the information requirements in 316(b). In 2017, Ascend Performance Chemicals, a neighboring facility located at TRM 301, submitted 316(b) information for ADEM's approval. That report included data from several TVA studies of the BFN Plant intake and discharge (Enersolv, 2017).

3.0 Source Water Physical Data

3.1 LOCATION AND PHYSICAL CONFIGURATION

The Tennessee River is formed near Knoxville, Tennessee, and ultimately flows into the Ohio River at Paducah, Kentucky. The Wheeler Reservoir, located in northern Alabama on the Tennessee River, was created by the Tennessee Valley Authority (TVA) by the construction of the Wheeler Dam in 1936. Wheeler Reservoir is approximately 60 miles long and borders Lauderdale, Lawrence, Limestone, Morgan, and Madison counties in Alabama. According to the TVA, Wheeler Reservoir has approximately 1,027 miles of shoreline, 67,070 acres of water surface, and a volume of 1,050,000 acre-feet at the normal summer pool elevation of 556 feet mean sea level (MSL).

Wheeler Dam is located at Tennessee River Mile (TRM) 274.9 based upon the US Army Corps of Engineers Tennessee River Charts. The Guntersville Lake Dam, located at TRM 349, controls the flow of the Tennessee River upstream of Wheeler Reservoir. 3M's cooling water intake structure (CWIS) is located on the south shore of the Wheeler Reservoir at approximately TRM 300. The Browns Ferry Nuclear (BFN) Plant is located at TRM 294. A map showing the geographical locations and configurations of Wheeler Reservoir, Wheeler Dam, Guntersville Dam, the BFN Plant, and the 3M CWIS is attached as Figure 1.

The reach of the Tennessee River between TRM 289.3 and TRM 305 has the following classifications, as determined by ADEM:

ADEM Assessment Unit ID: AL06030002-1107-102
Category: 5
Downstream: Five miles upstream of Elk River (TRM 289.3)
Upstream: US Highway 31
Classification: Fish and Wildlife, Swimming
River Basin: Tennessee
2016 303(d) List Impairments: Nutrients

3.2 SALINITY AND TEMPERATURE REGIMES

In October 2011, the TVA conducted sampling for various water quality parameters including temperature and conductivity at various elevations in the water column within the vicinity of the BFN Plant. The full methodology of the sampling methods along with the monitoring results can be found within the following report:

TVA, July 2012. Biological Monitoring of the Tennessee River Near the Browns Ferry Nuclear Plant Discharge Autumn 2011.

In general, results from the sampling locations upstream of the BFN Plant discharge are more representative of the ambient conditions in Wheeler Lake compared to the results from downstream locations. The TVA study reported that water temperatures upstream of the BFN Plant discharge ranged from 68 to 75 degrees F depending on distance from bank and depth, and all temperature profiles generally indicated a decrease in temperature as depth increased. The study concluded that water temperatures were within the range expected for lower mainstem Tennessee River reservoirs in autumn, and the profiles indicated little thermal stratification (TVA, 2012).

Conductivity upstream of the BFN Plant ranged from 178 to 190 μS/cm. Conductivity is a measure of the ability of a solution to conduct electricity and is related to salinity. Based on the water quality results that were reported including temperature and salinity, the study concluded that the water in Wheeler Reservoir near the BFN Plant during autumn 2011 was of a quality capable of supporting, in fair ecological health, a balanced indigenous population of the type expected for this reservoir (TVA, 2012).

3.3 HYDROLOGY AND GEOMORPHOLOGY

Reservoirs are characterized by three zones: an inflow zone, having characteristics more riverine; a forebay zone immediately upstream from a dam, having more lacustrine characteristics; and a transition zone, which provides a buffer in the middle of the reservoir. As water flows downstream from the inflow, velocity decreases as the cross-sectional area of the reservoir increases. Areas within the transition zone may exhibit high flow, low flow, or even negative flows depending on the rate water is released through the upstream and downstream dams.

The TVA has previously characterized the area of Wheeler Reservoir near BFN Plant as a transition zone where the velocity of water depends on the rate water released through Guntersville and Wheeler Dams (TVA, 2006). It is assumed that the area near the 3M CWIS exhibits similar characteristics.

The TVA operates Guntersville Dam and Wheeler Dam to maintain navigable depths throughout the Wheeler Reservoir, with water levels between 550.6 ft MSL and 556.3 ft MSL. During the 2015 water-year, the winter pool elevation at the Tennessee River at Decatur Gage (USGS Station 03577150, located at TRM 305) ranged from 550.6 ft MSL to 554.0 ft MSL. The summer pool elevation ranged from 553.2 ft MSL to 556.6 ft MSL.

Tennessee River daily flow data through Wheeler Dam were provided by TVA from July 2008-July 2018. Below is a summary of the data:

Average Daily Flow: 50,392 cfs
Minimum Daily Flow: 8,557 cfs
Minimum Guaranteed Flow: None

Stream information for the Tennessee River based on previous ADEM permit rationale documentation for the facility is shown below.

7Q10: 6,436 cfs
7Q2: 11,320 cfs
1Q10: 4,827 cfs
Annual Average Flow: 43,901 cfs

4.0 Cooling Water Intake Structure Data

4.1 LOCATION AND CONFIGURATION

3M's cooling water intake structure (CWIS) is located on the south shore of the Wheeler Reservoir on the Tennessee River at approximately Tennessee River Mile (TRM) 300 (34°38'55.5"N, 87°03'04.3"W). The CWIS consists of a pumping station building that houses three 6-stage vertical turbine pumps manufactured by Fairbanks Morse, Model 17H. The pumps are each specified to provide 3750 gallons per minute (gpm) at 265 ft of total discharge head. The motors for each pump are 300 HP, 1180 RPM, 2300 V. The pumps are set on the operating floor at elevation 565.00 ft MSL.

Each pump withdraws river water from a dedicated sump, which are arranged parallel to the bank. River water entering each sump flows through a bar screen, two fine screens in series, and finally through a 36" x 36" sluice gate. Each fine screen assembly is approximately 21'-8" tall and 6'-11" wide, including framing, and has six screen sections arranged vertically. The mesh is 18-gauge stainless steel wire with approximately 1/2" spacing. The bottom elevation of the fine screens is 539.33 ft MSL, the bottom elevation of the intake channel is 538.0 ft MSL, and the bottom of the flow channel, approximately 450 ft from the screens, is approximately 522 ft MSL.

4.2 NARRATIVE DESCRIPTION OF OPERATION

The 3M cooling water system is operated on a pressure control loop. The pumps located in the CWIS pumping building are used to provide the pressure to the loop, and are operated in lead-lag mode, normally with only one pump operating at a time. The header pressure is monitored and when a low pressure set point is reached it calls for the primary pump to start. When a high pressure set point is reached the pump is stopped. If the pressure continues to fall to a secondary low pressure set point the second pump is started.

Because the manufacturing plant operates continuously, the cooling water system is operational 24 hours per day, seven days per week, 365 days per year. There is minimal seasonal variation in the operation of the cooling water system. 100% of the water used in the cooling water system is supplied by the CWIS pumps.

The full capacity design of the 3M CWIS with all three pumps operational, concurrently, would intake 16.2 million gallons per day (MGD), or 25.1 cubic feet per second (cfs). However, 3M rarely operates all 3 pumps concurrently; the facility typically operates 1 or 2 pumps at any given time. The average cooling water flow from January 2015 through May 2018 was 4.35 MGD (6.73 cfs), with a maximum daily flow of 7.00 MGD (10.8 cfs).

4.3 FLOW DISTRIBUTION

Refer to Figure 2 for a flow distribution and water balance diagram that includes all sources of water to the facility and discharges.

4.4 ENGINEERING DRAWINGS

Attached in Appendix A are engineering drawings of the cooling water intake structure, pumps, and screens.

5.0 Source Water Baseline Biological Characterization Data

5.1 DATA AVAILABILITY AND METHODOLOGY

Relevant biological data are available for the Wheeler Reservoir from previously collected publicly available data sets. The Tennessee Valley Authority (TVA) has completed studies documenting the biological community in the Wheeler Reservoir at their Browns Ferry Nuclear (BFN) Plant located approximately 6 miles downstream from the 3M CWIS. The TVA conducted annual biological monitoring within the Wheeler Reservoir from 2000 through 2009. The most recent data collected by TVA occurred in autumn 2011. The results of the 2011 monitoring efforts are summarized here to describe the existing biological community within the Wheeler Reservoir. The existing data are relevant to the 3M CWIS because of the relative proximity of the study location in the Wheeler Reservoir and the similarity in the lake cross sections at each site. The reservoir is more than 45 miles long. Both sites are within the transition zone (middle third) of the lake.

In 2011, the fish community sampling methods conducted by the TVA included boat electrofishing and gill nets, continuing sampling methods from previous monitoring efforts. Fish community data were collected from two stations, one located up stream of the TRM 292.5). Fifteen electrofishing runs and ten overnight gill net sets were completed at each of the two fish monitoring locations. The TVA assessment also collected benthic macroinvertebrate community data along three transects, two downstream of the discharge plume (at TRM 290.4 and 293.2) and one upstream of the discharge point (TRM 295.9). The full methodology of the sampling methods along with the monitoring results can be found within the following report:

TVA, July 2012. Biological Monitoring of the Tennessee River Near the Browns Ferry Nuclear Plant Discharge Autumn 2011.

Data presented in the referenced TVA report includes the fish community monitoring data from that year as well as summary info from previous sampling years within the Wheeler reservoir. These data are the most recent publicly available data for the Wheeler Reservoir. These data are part of a long-term monitoring effort by the TVA to establish fish community conditions and trends within the Wheeler Reservoir.

5.2 LIST OF SPECIES FOR ALL LIFE STAGES

At total of 35 different fish species were collected from the two sampling stations. The most abundant species collected were gizzard shad, Mississippi silverside, and threadfin shad, comprising 66 percent of the total catch (TVA, 2012). The fish community data from the TVA 2011 monitoring efforts are shown in Table 5-1.

Table 5-1: Species Identified in Wheeler Reservoir in Autumn 2011 (TVA, 2012)

Common Name	Scientific Name	Downstream TRM 292.5	Upstream TRM 295.9	Total Combined Catch
Longnose Gar	Lepisosteus Osseus	12	0	12
Gizzard Shad	Dorosoma Cepedianum	679	645	1324
Common Carp	Cyprinus Carpio	6	1	7
Golden Shinner	Notemigonus Crysoleucas	26	1	27
Spotfin Shiner	Cyprinella Spiloptera	14	109	123
Redbreast Sunfish	Lepomis Auritus	0	2	2
Green Sunfish	Lepomis Cyanellus	47	66	113
Bluegill	Lepomis Macrochirus	123	238	361
Largemouth Bass	Micropterus Salmoides	110	32	142
White Crappie	Pomoxis Annularis	3	4	7
Skipjack Herring	Alosa Chrysochloris	2	4	6
Northern Hog Sucker	Hypentelium Nigricans	1	0	1
Spotted Sucker	Minytrema Melanops	14	7	21
Black Redhorse	Moxostoma Duquesnei	0	8	8
Longear Sunfish	Lepomis Megalotis	27	56	83
Smallmouth Bass	Micropterus Dolomieu	20	29	49
Spotted Gar	Lepisosteus Oculatus	9	5	14
Threadfin Shad	Dorosoma Petenense	303	240	543
Largescale Stoneroller	Campostoma Oligolepis	1	0	1
Smallmouth Buffalo	Ictiobus Bubalus	6	10	16
Black Buffalo	Ictiobus Niger	2	4	6
Silver Redhorse	Moxostoma Anisurum	0	1	1
Blue Catfish	Ictalurus Furcatus	2	4	6
Channel Catfish	Ictalurus Punctatus	50	55	105
Flathead Catfish	Pylodictis Olivaris	11	14	25
White Bass	Morone Chrysops	18	8	26
Yellow Bass	Morone Mississippienses	11	0	11
Warmouth	Lepomis Gluosus	1	2	3
Redear Sunfish	Lepomis Microlophus	28	14	42
Spotted Bass	Micropterus Punctulatus	3	1	4
Black Crappie	Pomoxis Nigromaculatus	2	1	3
Longperch	Percina Caprodes	1	0	1
Freshwater Drum	Aplodinotus Grunniens	12	30	42
Mississippi Silverside	Menidia Audens	352	279	631
Chestnut Lamprey	Ichthyomyzon Castaneus	0	1	1
	Total Species	**35**	**Total Indiv.**	**3767**

Fish community information was used to calculate a Reservoir Fish Assemblage Index (RFAI) score at each of the two monitoring locations near the BFN Plant. An RFAI protocol to assess the health of the fish community was developed by the TVA for the Wheeler Reservoir. RFAI scores for the Wheeler Reservoir were based on 12 metrics evaluating four general categories of the fish community including: species richness and composition; trophic composition; abundance; and fish health (TVA, 2012). The individual metrics used to calculate RFAI scores for the Wheeler Reservoir fish community monitoring efforts are listed in Table 5-2.

Table 5-2: Fish community metrics used to calculate RFAI scores (TVA, 2012)

	Metric Name
1	Total Number of Species
2	Number of Centrachid Species (i.e. Sunfish)
3	Number of Benthic Invertivore Species
4	Number of Intolerant Species
5	Percentage of Tolerant Individuals
6	Percent Dominance by One Species
7	Percentage of Non-Indigenous Species
8	Number of Top Carnivore Species
9	Percentage of Individuals as Top Carnivores
10	Percentage of Individuals as Ominvores
11	Average Number of Fish Individuals Per Run
12	Percentage of Individuals Anomolies

RFAI scores were calculated from the above 12 metrics and result in a score range from 12 to 60. Quality ratings for the scores included: Very Poor (12-21); Poor (22-31); Fair (32-40); Good (41-50) and Excellent (51-60). RFAI scores are robust measures of fish community health because they use multiple metrics to evaluate the composition of the species and individuals at site or within a water body and therefore have low susceptibility to changes in scores that would be due to only one species or small changes in physical conditions in a water body (TVA, 2012). The RFAI scores and quality ratings for the two sampling stations in 2011 were as follows:

- Upstream RM 295.9: 40 - Fair
- Downstream RM 292.5: 38 - Fair

During a period of 1993 through 2011, the TVA calculated RFAI scores for 17 years at five different stations within the Wheeler Reservoir. The scores across all stations for all sampling years ranged from 30 to 52. The average RFAI scores for the two stations near the BFN was 41 for each station, which is the low end of the "Good" rating category. The two scores from 2011 are similar to the long-term averages from both sites and not measurably different from the scores collected the prior five years at either site. The differences between the upstream and downstream RFAI scores from 2011 are within the range of variation for RFAI scores and therefore not significantly different from each other. Additionally, the scores are both similar to the long term averages for each site and also similar to the scores the recent prior years in 2008 and 2009 (TVA, 2012).

5.3 IDENTIFICATION OF SPECIES AND LIFE STAGES MOST SUSCEPTIBLE TO IMPINGEMENT AND ENTRAINMENT

Fish community data was collected by the TVA near the BNF within the Wheeler Reservoir in 2008, 2009, and 2011. There was some fluctuation in the total catch of all individuals, number of species present, and numbers of individuals from each species across these monitoring years. However, there were several species that comprised a significant portion of the total catch across those monitoring years. As the most prominent species in this section of the Wheeler Reservoir, they are therefore the species most susceptible to impingement or entrainment at a CWIS (TVA, 2012). The most prominent species collected near the BNF from the three most recent sample years are presented in Table 5-3.

Table 5-3: Prominent Fish collected from Wheeler Reservoir between 2008 and 2011 (TVA, 2012)

Common Name	2008		2009		2011	
	TRM 292.5	TRM 295.9	TRM 292.5	TRM 295.9	TRM 292.5	TRM 295.9
Gizzard Shad	353	308	382	309	679	645
Spotfin Shiner	3	2	29	5	14	109
Bluegill	176	80	87	58	123	238
Largemouth Bass	138	97	107	99	110	32
Longear Sunfish	84	23	32	13	27	56
Smallmouth Bass	17	6	56	2	20	29
Threadfin Shad	1	4	16	14	303	240
Channel Catfish	27	89	66	110	50	55
White Bass	57	28	3	4	18	8
Inland Silverside	887	261	639	389	0	0
Mississippi Silverside	0	0	0	0	352	279

5.4 LIFE CYCLES AND SEASONAL/DAILY ACTIVITIES OF RELEVANT SPECIES

There are several species that have been prominent in the total catch of the fish community monitoring efforts within the Wheeler reservoir (see Table 5-3). Relevant life history information of these prominent species is presented in the following sections.

Gizzard Shad

From: https://www.arkansasstripers.com/gizzard-shad.htm

Gizzard shad are found in lakes, rivers, and reservoirs across the Midwest and eastern half of the US. They are a prevalent species in reservoirs across the southern US. Gizzard shad are omnivorous filter feeder taking both phytoplankton and zoo plankton. The adults have more than 400, fine gill rakers that can catch minute plankton. Gizzard Shad have an unusual digestion process for fish. The vegetable material they eat is ground in a gizzard like stomach. Some bottom material is often ingested while feeding. Lake and reservoir populations use both the shoreline and open water areas. Essentially it is an open water species, living at or near the surface, however, they have been collected at depths of up to 100 feet. Conditions for gizzard shad populations are optimal in warm, fertile, shallow bodies of water with soft mud bottoms, high turbidity, and relatively few predators. The gizzard shad spawns in spring, typically from May to June, when water temperatures reach the mid-60s to mid-70s.

Spotfin Shiner

From: https://www.fishbase.de/summary/Cyprinella-spiloptera

Spotfin shiner are a small shiner species that grows to lengths of up to 12 centimeters. They are found in rivers and streams across the upper Midwest and into the southeast US as far south as Alabama. Spotfin shiners live along sandy areas and gravel bars in pools and runs of creeks and small to medium rivers. They are also occasionally found in large river systems, which is how they can ultimately end up in a reservoir of a large river. They feed on the surface on zooplankton and aquatic insects. Spotfin shiners spawn in the crevices of gravel beds or rocky areas as well as near logs. The spawning season is mid-summer lasting from June through mid-August.

Bluegill

From: https://outdooralabama.com/bream/bluegill

The bluegill is a common fish found in ponds, lakes, rivers, and streams through the US as well as into southern Canada and northern Mexico. In Alabama they are found in waterbodies ranging from small private ponds, to large reservoirs. Bluegills are a popular fish among anglers and are stocked as a sport fish in many places in the US. They are commonly six to ten inches long. Bluegills spawn by making nests in gravel beds in shallow to moderately deep areas. The spawning season is driven by water temperature and is typically late May into June but can last for the entire summer. Bluegills are sight feeders that prey on zooplankton and aquatic insects. Large populations of bluegills in some systems can cause over grazing of the primary base of the food web which can lead to either size-stunted bluegill populations or a lack of resources for other species.

Largemouth Bass

From: https://www.outdooralabama.com/black-bass/largemouth-bass

Largemouth bass are one of the most popular game fishes in the US and can be found across the entire county as well as Canada and Mexico. Largemouth bass can be found from 10 to 30 inches, with large individuals weighing in excess of 12 pounds. They have a dark green back that transitions to a light belly and underside. They also have a prominent lateral line along the length of the fish and have a very large mouth capable of swallowing significant size prey. Largemouth bass can be found in almost all aquatic habitats in the US, from small ponds and wetlands, in medium to large lakes, and from small to large streams and rivers. They are also a very prominent species in reservoirs, especially those found in the central and southern portions of the US. Largemouth bass spawn on gravel beds and protect the nests from predators after eggs are deposited. Spawning season is typically from April to May in the southern US but can be later in the northern areas from May into June. Due to the size of their mouths, largemouth bass can feed on a variety of prey including aquatic insects, worms, crayfish, and small to medium sized fish.

Longear Sunfish

From: https://outdooralabama.com/bream/longear-sunfish

The longear sunfish gets its name because the black ear-flap on the gill plate is elongated compared to other sunfish species. They are a smaller sunfish compared to bluegills reaching sizes of four to seven inches. They can be commonly found in small to moderately sized streams, as well as rivers, reservoirs, and oxbow areas. These fish have a small home range congregating in close areas where they form pods to protect nests. The nests are built on sand or gravel shoals near where streams flow into lakes or reservoirs. They spwan in the spring to summer, similar to other sunfish species. They will eat fish eggs, zooplankton, and small aquatic insects. Larger individuals will also feed on terrestrial insects.

Threadfin Shad

From: https://fisheries.tamu.edu/pond-management/species/threadfin-shad/

Threadfin shad are native to the U.S. west of the Appalachian Mountains. They have also been introduced in many lakes and rivers as a forage fish for larger sportfish species. These fish are extremely sensitive to cold water and do better in states with warmer temperatures. Threadfin shad are a warm water species that will die if water temperatures go below 6 degrees Celsius. They can be found in open brackish waters, as well as large ponds, lakes, and reservoirs. They are dependent on light for foraging and will stay high in the water column, feeding exclusively on plankton. They can spawn as early as their first summer of life but often wait till their second summer to mate. Mating occurs between August and July. The lay sticky egg masses that clump to the substrate or floating objects. Few of these fish live to be older than 2 years or grow over 10cm long.

Smallmouth Bass

From: https://www.outdooralabama.com/black-bass/smallmouth-bass

The smallmouth bass grow from 10 to over 20 inches and are smaller in size than the largemouth bass, growing up to six pounds. The lateral line of the smallmouth bass is not as prominent as the largemouth bass and they are a bronze-green in color. Their eyes can also sometimes have a reddish tint compared to other black basses. Smallmouth bass are not as widespread across the US as the largemouth bass though they can be found in lakes, rivers, streams, and reservoirs. They typically prefer systems that have cool, clear, deep water compared to warmer water preferred by largemouth bass. Smallmouth bass typically prefer rocky cobble to boulder size substrates but can also be found around logs, treetops, and even artificial riprap. Spawning periods for smallmouth bass are usually mid-spring from April into May. They feed on small fishes, crayfish, and insects.

Channel Catfish

From: https://outdooralabama.com/catfish/channel-catfish

Channel catfish are a medium to large size fish typically ranging from 15 to 24 inches but large individuals can exceed 30 inches and 40 pounds. They are silver in color with dark green to grey backs and pinkish iridescent tints along the sides and belly. Channel Catfish are found in medium to large streams and rivers, reservoirs, oxbow lakes, and swamps.

They also can be stocked in lakes and ponds. They are a popular gamefish in many areas of the US. They are often found around areas of current and prefer sand, gravel, and silt substrates. Spawning occurs from late spring into the summer and can continue as late as August in some cases. Channel catfish are a top predator in most systems feeding on aquatic insects and crayfish when they are younger but then small to medium fish and mollusks as adults.

White Bass

From: https://www.outdooralabama.com/temperate-bass/white-bass

White bass have lateral stripes on their sides and are often called "stripped bass" by local anglers even though they are a different species than true striped bass found in saltwater systems. White bass are typically 10 to 15 inches in size but individuals can exceed 20 inches. They have dark coloring on their back (grey/green or grey/blue) and then light sides making the stripes stand out. They are found in streams, rivers, and reservoirs in the US. They have been introduced into a number of river and reservoir systems as a game fish. White bass roam the open waters of rivers and reservoirs feeding aggressively aquatic insects and other fishes including shad. They are also found along riprap, near downed trees, or around dams and other river structures. Spawning occurs in the water column and eggs drift down to the bottom of the system to hatch. The spawning period for largemouth bass is normally from April into May.

Inland Silverside

From: https://outdooralabama.com/silverside/inland-silverside

The Inland Silverside is a small fish that is normally two to four inches in length. They have a pale green to translucent yellow color along the back and sides and also have a silver stripe running the length of the body. They are found in the eastern US from the north Atlantic Coast and south down towards the gulf and west across the Mississippi River drainage. They prefer brackish waters of bayous and lagoons, as well as quiet back pay areas of lakes, rivers, and reservoirs. The inland silverside feeds on small crustaceans, aquatic insects, worms, and occasionally algae. They can have multiple spawning events that can occur throughout the spring and summer seasons from April until August. They spawn in open water but the eggs attach themselves to vegetation and other submerged objects.

Mississippi Silverside

From: https://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=2903

The Mississippi silverside can be found in the Mississippi River drainage and the major tributaries, from the north Atlantic down to the Gulf coast. They are small fish normally 2 to five inches in length. The Mississippi silverside usually occur at the surface in clear, quiet water over sand or gravel. They have been introduced into some systems and can quickly become very abundant in rivers or reservoirs shortly have being introduced. With its ability to reproduce quickly there is the threat of this species consuming significant aquatic resources and ultimately impacting other fish species in a system by out competing them for food and nutrients.

5.5 THREATENED, ENDANGERED, AND OTHER PROTECTED SPECIES

A list of threatened, endangered, and other protected species for Morgan County, Alabama was acquired from the US Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS) and is summarized in Table 5-4.

Table 5-4: List of threatened, endangered, and other protected species for Morgan County, Alabama

Group	Name	Population	Status	Recovery Plan	Recovery Plan Action Status
Amphibians	Black warrior (=Sipsey Fork) Waterdog (Necturus alabamensis)	Wherever found	Endangered	Recovery Outline for the Black Warrior Waterdog (Necturus alabamensis), January 2018	Recovery efforts in progress, but no implementation information yet to display.
Clams	Pink mucket (pearlymussel) (Lampsilis abrupta)	Wherever found	Endangered	Pink Mucket Pearly Mussel	Implementation Progress
Clams	Rough pigtoe (Pleurobema plenum)	Wherever found	Endangered	Rough Pigtoe Pearly Mussel	Implementation Progress
Clams	Spectaclecase (mussel) (Cumberlandia monodonta)	Wherever found	Endangered		
Clams	Dark pigtoe (Pleurobema furvum)	Wherever found	Endangered	Recovery Plan for the Mobile River Basin (15 species)	Implementation Progress
Clams	Sheepnose Mussel (Plethobasus cyphyus)	Wherever found	Endangered		
Crustaceans	Alabama cave shrimp (Palaemonias alabamae)	Wherever found	Endangered	Alabama Cave Shrimp Recovery Plan	Implementation Progress
Ferns and Allies	American hart's-tongue fern (Asplenium scolopendrium var. americanum)	Wherever found	Threatened	American Hart's-tongue Fern	Implementation Progress
Flowering Plants	Fleshy-fruit gladecress (Leavenworthia crassa)	Wherever found	Endangered		
Flowering Plants	Price's potato-bean (Apios priceana)		Threatened	Price's Potato Bean	Implementation Progress

Flowering Plants	Leafy prairie-clover (Dalea foliosa)	Wherever found	Endangered	Leafy Prairie-clover	Implementation Progress
Mammals	Indiana bat (Myotis sodalis)	Wherever found	Endangered	Indiana Bat (Myotis sodalis) Draft Recovery Plan: First Revision	Implementation Progress
Mammals	Gray bat (Myotis grisescens)	Wherever found	Endangered	Gray Bat	Implementation Progress
Mammals	Northern Long-Eared Bat (Myotis septentrionalis)	Wherever found	Threatened		
Reptiles	Flattened musk turtle (Sternotherus depressus)	Black Warrior R. system upstream from Bankhead Dam	Threatened	Flattened Musk Turtle	Implementation Progress
Snails	Anthony's riversnail (Athearnia anthonyi)	Wherever found; Except where listed as Experimental Populations	Endangered	Anthony's Riversnail	Implementation Progress

5.6 CONSULTATION WITH FEDERAL AND STATE AGENCIES

3M has not conducted consultation with state or federal agencies, nor has sought the need for an incidental take permit or authorization related to federally or state protected species under the protection of the USFWS or National Marine Fisheries Service (NMFS).

5.7 CONCLUSIONS

The data presented in the TVA Biological Monitoring report indicates that the fish community within the Wheeler Reservoir is stable and that the BFN Plant is not having an impact on the fish community within the reservoir (TVA, 2012).

To facilitate comparison between the BFN Plant CWIS and the 3M CWIS, Table 5-5 provides a summary of cooling water flows for both facilities.

Table 5-5: Comparison of Cooling Water Flow Rates

	BFN Plant	3M
Maximum Flow Rate (MGD)	3,468	16.2
Average Flow Rate (MGD)	1,986[1]	4.35[2]

[1] Average flow from 2003-2004, with only Units 2 and 3 operational (TVA, 2006). Note that Unit 1 was returned to service in 2007
[2] Average flow from January 2015 to May 2018

The 3M CWIS is considerably smaller than that of the BNF Plant, intaking and discharging a cooling water volume of between 0.2% and 0.5%, comparatively. Therefore, the smaller 3M CWIS is likely also not impacting the fish community within the Wheeler Reservoir.

6.0 Cooling Water System Data

6.1 NARRATIVE DESCRIPTION

The 3M Decatur cooling water system is operational 24 hours per day, seven days per week, 365 days per year. There is minimal consistent seasonal variation in the operation of the cooling water system. River water supplied by the CWIS pumps makes up 100% of the water used in the cooling water system; no process water or gray water is reused for cooling water. No cooling water is reused as process water; the cooling system is once-through and is discharged to the Tennessee River through NPDES Outfall DSN 001, where it is combined with the effluent from the facility's wastewater treatment plant.

6.2 DESIGN AND ENGINEERING CALCULATIONS

Table 6-1 shows the average monthly intake flows from 2015 through May 2018.

Table 6-1: Monthly Average CWIS Flow Rates

Month	Average Flow (MGD)[1]			
	2015	2016	2017	2018
January	2.95	4.73	4.12	4.20
February	3.33	5.42	3.86	4.26
March	3.10	5.02	4.09	4.13
April	3.21	5.24	4.25	3.78
May	3.71	5.44	4.57	3.49
June	3.65	5.25	4.73	-
July	5.03	4.72	4.97	-
August	4.87	4.46	4.41	-
September	4.87	4.49	4.58	-
October	5.19	4.47	4.77	-
November	4.76	3.33	4.44	-
December	4.75	3.50	4.10	-

[1] As reported in the facility's monthly DMRs for Outfall DSN 001B. Flows are determined by subtracting flows measured at DSN 001A from DSN 001.

The Wheeler Reservoir has a volume of 1,050,000 acre-feet at the normal summer pool elevation. Based on flow data provided by TVA, the Tennessee River average daily flow through Wheeler Dam from 2008-2018 was 50,392 cfs (32,569 MGD). The average cooling water flow at 3M Decatur from January 2015 through May 2018 was 4.35 MGD (6.73 cfs, or 13.3 acre-feet per day). Based on these volumes and flows, on average 3M withdraws less than 0.0013% per day of the normal summer pool reservoir volume and less than 0.014% of the average daily flow. Table 6-2 shows the proportion of the Tennessee River average daily flow withdrawn, on a monthly basis.

Table 6-2: Average Proportion of Tennessee River Flow Withdrawn by CWIS

Month	Average Proportion[1]			
	2015	2016	2017	2018
January	0.006%	0.007%	0.012%	0.022%
February	0.010%	0.007%	0.014%	0.005%
March	0.006%	0.012%	0.014%	0.006%
April	0.008%	0.035%	0.012%	0.009%
May	0.030%	0.073%	0.011%	0.013%
June	0.025%	0.055%	0.017%	-
July	0.017%	0.046%	0.019%	-
August	0.022%	0.027%	0.019%	-
September	0.031%	0.039%	0.023%	-
October	0.020%	0.043%	0.020%	-
November	0.014%	0.033%	0.013%	-
December	0.005%	0.016%	0.015%	-

[1] Proportions are determined by dividing monthly average CWIS flow by monthly average flow through Wheeler Dam.

6.3 EXISTING IMPINGEMENT AND ENTRAINMENT TECHNOLOGIES OR OPERATIONAL MEASURES

The 3M CWIS has fine screens with 1/2" spacing to limit entrainment of larger objects and has a maximum design through-screen intake velocity of less than 0.5 feet per second. Additional discussion on the design intake velocity is provided in the next section.

3M performs regular preventative maintenance of the CWIS, helping to keep the various components free of obstruction. This includes annual cleaning of the pump suction sumps, dredging in front of the bar screens as needed, and quarterly cleaning of the fine screens.

7.0 Chosen Method of Compliance with Impingement Mortality Standard

7.1 40 CFR 125.94(C)(2)

This section documents 3M Decatur's CWIS compliance with the impingement standard of the rule. The chosen method is 40 CFR 125.94(c)(2), which is summarized below.

(2) 0.5 Feet Per Second Through-Screen Design Velocity. *A facility must operate a cooling water intake structure that has a maximum design through-screen intake velocity of 0.5 feet per second. The owner or operator of the facility must submit information to the Director that demonstrates that the maximum design intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh does not exceed 0.5 feet per second. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.*

Because all three pumps are identical, and each pump has a dedicated sump and set of screens, the through-screen velocities (TSV) for a single pump operating at full power were calculated. A free space opening rating of 74% was used for the fine screen mesh per vendor specifications. Table 7-1 shows the calculated TSV's under various conditions. Based on a minimum ambient surface water elevation of 550 ft MSL, the maximum design intake velocity through the CWIS screens is less than 0.5 feet per second.

Table 7-1: Design and actual through-screen velocity (TSV).

Condition	Elevation (ft MSL)	Free Space Opening (sf)	Design TSV (ft/sec)	Actual TSV (ft/sec)	
			Q = 5.4 MGD (1 Pump)	Q = 4.35 MGD (Avg Day)[1]	Q = 7.00 MGD (Max Day)[1,2]
Low Water	550	41	**0.206**	0.166	0.133
Normal Water	556	63	0.133	0.107	0.086
High Water	560	79	0.106	0.085	0.068
Flood	561	81	0.103	0.083	0.067

[1] Based on flow data from January 2015 through May 2018.
[2] TSV calculated assuming two pumps operating with flow split equally between them.

8.0 Entrainment Performance Studies

8.1 AVAILABLE DATA

Through a search of publicly available documents, one relevant entrainment study was found that was conducted by the TVA at their BFN Plant from 2006. The following reports were reviewed to evaluate entrainment mortality on the Wheeler Reservoir:

- *TVA, June 2006. Biological Assessment: Effects of Condenser Cooling Water Withdrawal on the Fish Community Near the Browns Ferry Nuclear Plant Intake.*
- *TVA, July 2012. Biological Monitoring of the Tennessee River Near the Browns Ferry Nuclear Plant Discharge Autumn 2011.*
- *Enersolv, 2017. Ascend Performance Materials - 316(b) Information: Cooling Water Intake Structure Data*

There are no additional publicly available entrainment mortality data sets that have collected since the 2006 study by the TVA for BFN. This 2006 study and associated data are relevant to the 3M CWIS because of the relative proximity of the study location in the Wheeler Reservoir and the similarity in the lake cross sections at each site. The reservoir is more than 45 miles long. Both sites (BFN and 3M CWIS) are within the transition zone (middle third) of the lake. The Ascend 2017 report is for a CWIS structure within one mile of the 3M CWIS.

The 2006 entrainment mortality study completed for BFN Plant is more than ten years old, however the above listed 2012 Biological Monitoring Report completed by the TVA for the Wheeler Reservoir has updated fish community data that is more recent and can be combined with the results of the 2006 entrainment mortality study to make the appropriate assessment of potential impacts to the fish community within the Wheeler Reservoir. A summary of the methods, data, and conclusion from the 2006 TVA entrainment mortality study for the BFN Plant is provided below.

8.2 SUMMARY OF BFN ENTRAINMENT STUDY

Methodology

Sampling methods for the entrainment mortality study included the collection of 20 samples from March through July from the water column flowing into the intake structure of the BFN. Eight samples were also collected from three locations within the reservoir to compare the amount of larval fish and fish eggs within the open water basin of the Wheeler Reservoir to the intake area around BFN. Samples were collected from the intake and reservoir locations in 2003 and 2004. All samples used a 0.5-meter fine mesh net with a flow meter. The flow meter was used to determine the volume of water that passed through the net during sampling, which was then used to calculate the density and number of fish eggs and larvae collected. Samples were processed in a laboratory where fish eggs and larvae were identified to the lowest practical taxon, which was typically to the family level (TVA, 2006).

Results

Data from the samples are reported as densities of fish eggs or larvae per unit of water sampled. The average number of fish eggs and larvae collected by TVA in 2003 and 2004 for are provided in Table 8-1.

Table 8-1: Summary of eggs and larval fish collected from 2003 and 2004 (TVA, 2006)

	Intake Samples		Reservoir Samples	
	2003	2004	2003	2004
	1000/m³	1000/m³	1000/m³	1000/m³
Eggs[1]				
Unspecified	5	T	T	T
Clupeidae	15	56	40	4
Catostomidae	T	T	T	T
Percidae	T	T	T	T
Sciaenidae	76	577	376	693
Total	96	633	416	697
Larvae[1]				
Lepisosteidae	T	T	T	T
Clupeidae	2943	8354	3877	9241
Hiodontidae	T	T	T	T
Cyprinidae	8	18	11	14
Catostomidae	43	3	34	3
Ictaluridae	4	6	1	1
Poeciliidae	T	T	T	T
Moronidae	56	90	275	72
Centrarchidae	24	157	20	55
Percidae	8	3	6	3
Sciaenidae	104	8	170	19
Atherinopsidae	16	160	6	90
Total	3206	8800	4399	9497

[1] Eggs and larvae were identified and grouped to family level.

For the collected fish eggs, freshwater drum were the most prevalent species comprising 94 percent of all eggs collected over the two-year sampling period. Freshwater drum from the family Sciaenidae were the dominant catch in both the intake and reservoir samples. Fish eggs were not identified to the species level, however freshwater drum are the only species from the Sciaendae family present in the US. Densities of eggs collected were similar in 2003 and 2004. For the juvenile and larval there were a total of 476,434 fish from twelve families collected. Over 95 percent of the total individuals collected were shad from the family Clupeidae. Fish densities collected were higher in 2004 compared to 2003 (TVA, 2006).

Conclusions

The results of the 2006 entrainment mortality study determined that the historical data collected in 2003 and 2004 demonstrate the variability in the occurrence and spatial temporal distribution of fish in Wheeler Reservoir near BFN. This variability translates into significant fluctuation in the entrainment and impingement rates associated with plant operation. Factors contributing to these fluctuations include year-class strength of individual species, life history of selected species, and the physical parameters of Wheeler Reservoir in the vicinity of BFN (TVA, 2006). The 2011 fish community report illustrates some of the potential variability in the fish community noted in the 2006 report. The 2011 fish community surveys did find that gizzard shad continued to be one of the most prevalent fish collected from 2008 through 2011 matching the prevalence of the species in the 2006 entrainment mortality study. However, freshwater drum eggs were the most prevalent species collected in 2003 and 2004 however this species comprised approximately only one percent of the total catch. Additionally, Mississippi Silverside were not present in 2008 or 2009 but were the most numerous species collected in 2011 (TVA, 2012).

8.3 CONCLUSIONS FOR 3M CWIS

Ultimately, the 2006 entrainment mortality study concluded that the data collected from the Wheeler Reservoir demonstrates that there are no significant impacts on the fish community due to the operation of BFN (TVA, 2006).

Due to the smaller flow of the 3M CWIS (approximately 0.2% to 0.5% of the BFN Plant cooling water flow, as discussed in Section 5.7), the location of the intake in the same section of the Wheeler Reservoir as the BFN intake, and the applicable inherent variation of the fish population within the Wheeler Reservoir, it can also be concluded that the operation of the 3M CWIS is not measurably impacting the fish community within the reservoir.

9.0 Operational Status

3M Decatur utilizes river water for once-through cooling water on vacuum jets, vessel jackets, heat exchangers and various other unit operations associated with various manufacturing processes throughout the facility. River water is not used for power production or steam generation at 3M Decatur.

As summarized in previous sections, the average cooling water flow from January 2015 through May 2018 was 4.35 MGD (6.73 cfs), with a maximum daily flow of 7.00 MGD (10.8 cfs).

3M does not anticipate any appreciable changes to the volume of non-contact cooling water used and does not have plans for changes to the CWIS over the next five years.

10.0 References

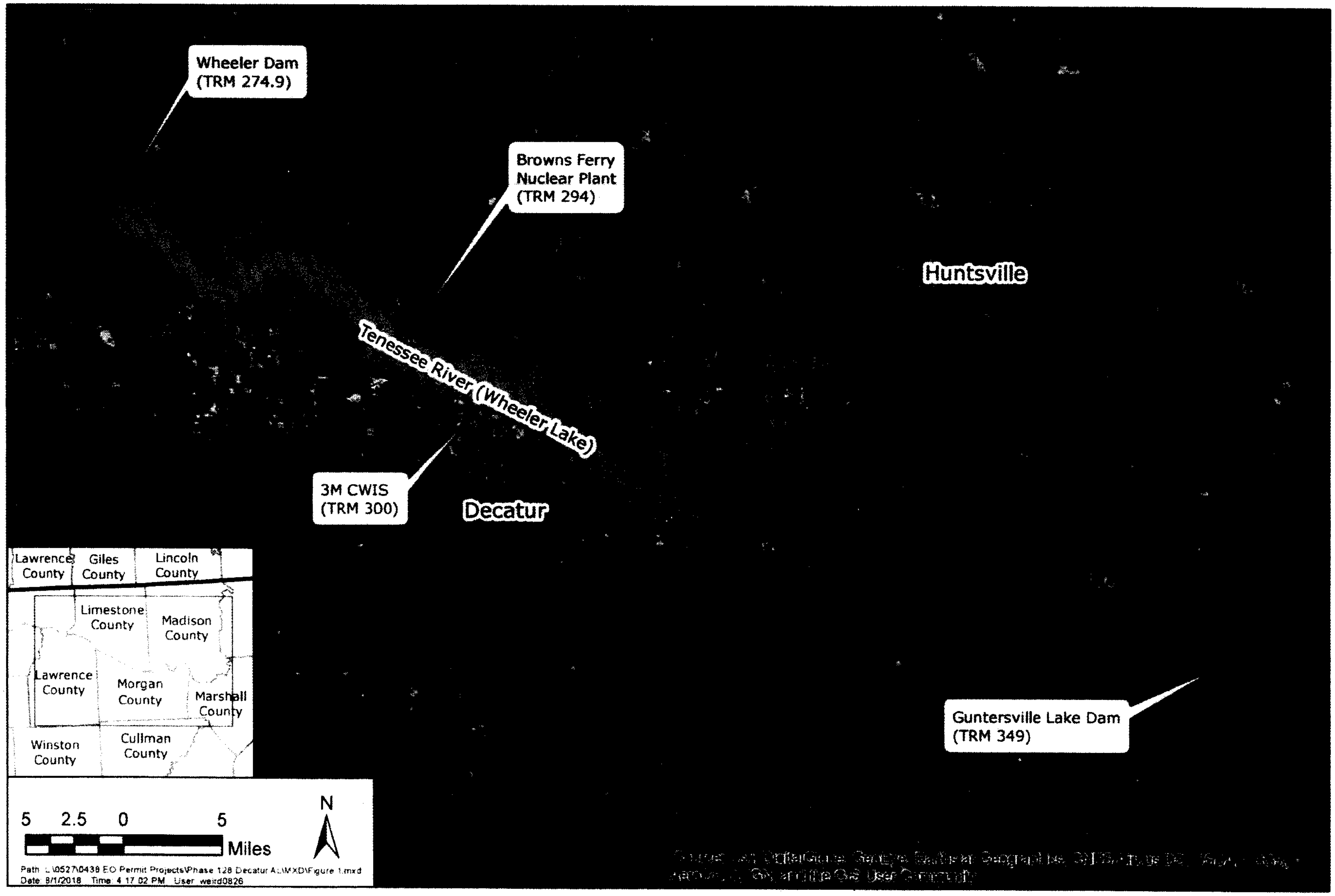
Enersolv, 2017. Ascend Performance Materials - 316(b) Information: Cooling Water Intake Structure Data.

TVA, June 2006. Biological Assessment: Effects of Condenser Cooling Water Withdrawal of the Fish Community Near the Browns Ferry Nuclear Plant Intake.

TVA, July 2012. Biological Monitoring of the Tennessee River Near Browns Ferry Nuclear Plant Discharge, Autumn 2011.

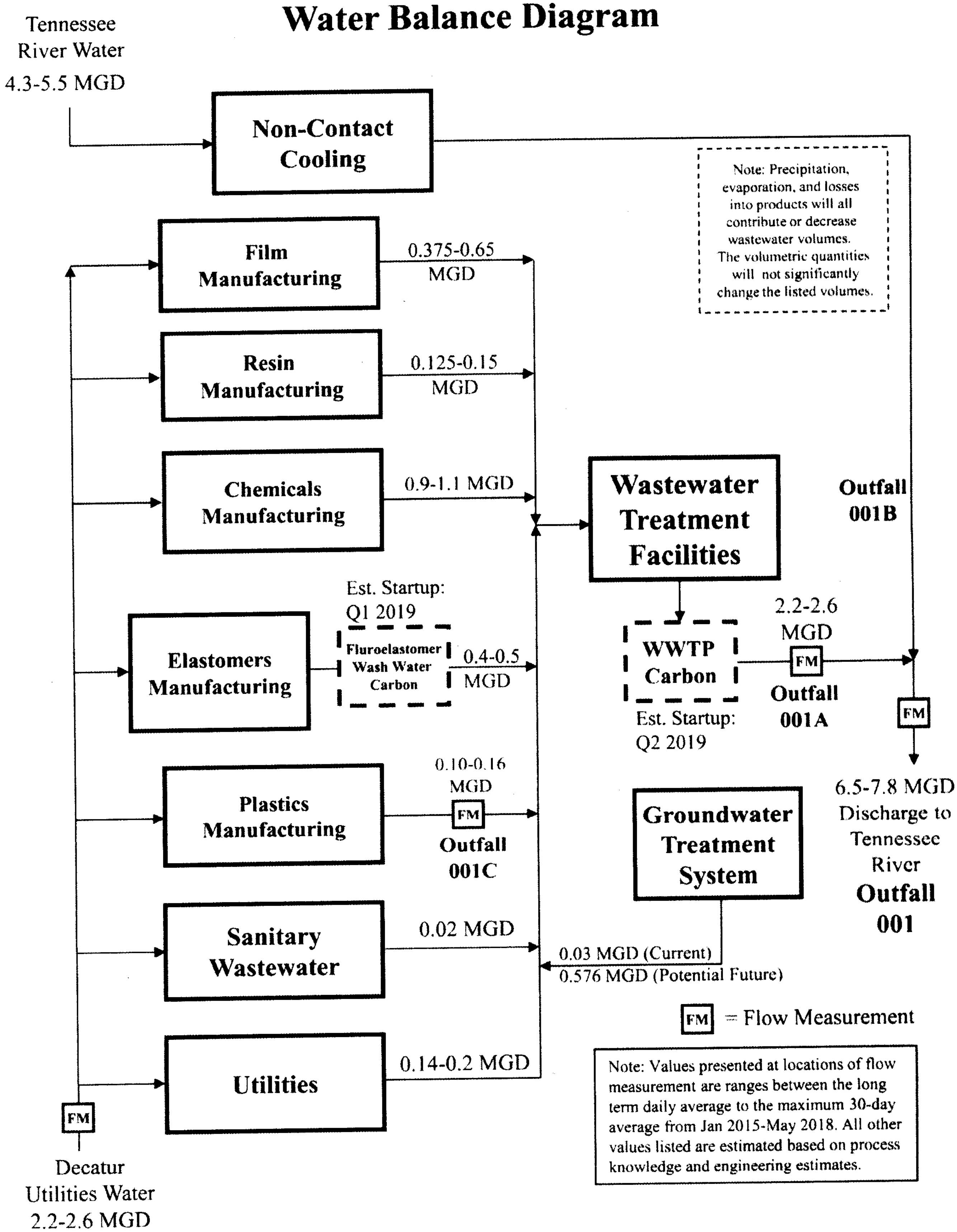
US Fish and Wildlife Services Environmental Conservation https://ecos.fws.gov/ecp/

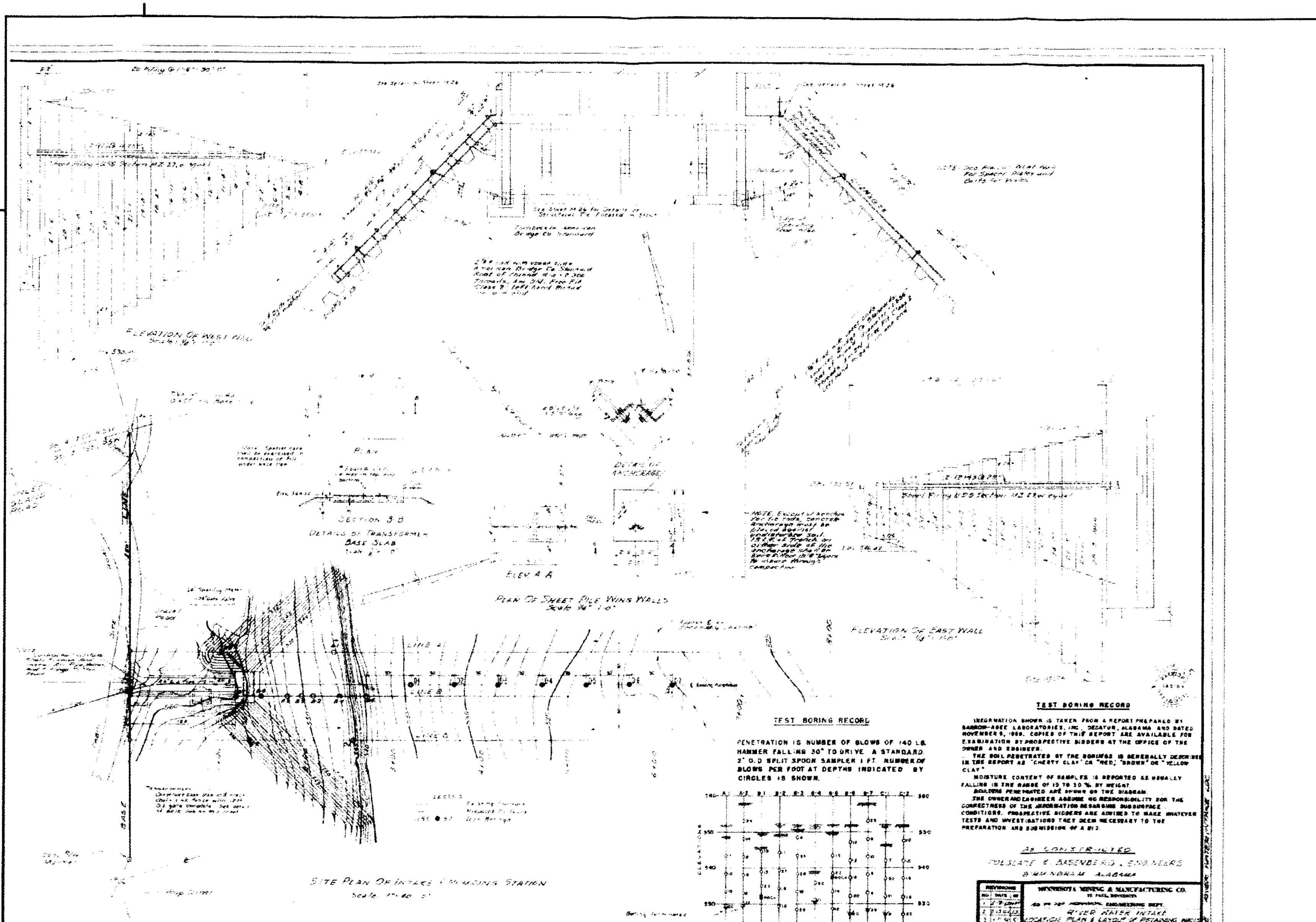
Wheeler Lake Water Level Website http://www.wheelerlake.info/Level/



3M COMPANY, INC.	WENCK Responsive partner. Exceptional outcomes.	AUGUST 2018
Cooling Water Intake Structure and Source Water Location Map		Figure 1

Figure 2
Water Balance Diagram





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3M

RIVER WATER INTAKE LOCATION PLAN & LAYOUT OF RETAINING WALLS

DECATUR

FLOOR ELEVATION | PROJECT NO.

FILE OR DWG NO.
DCTR-008-M-710

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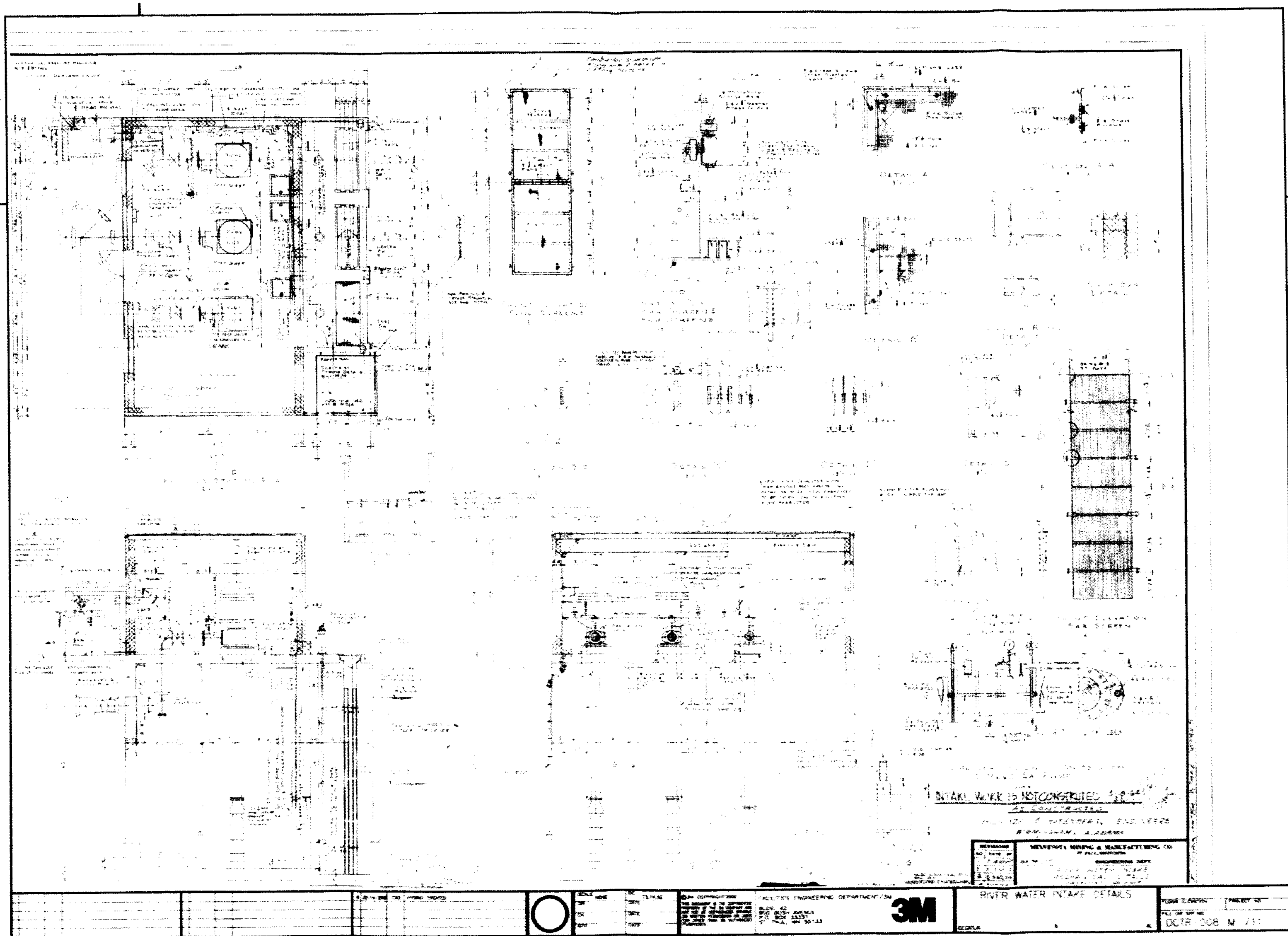

INTAKE WORK IS NOT CONSTRUCTED
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ENGINEERING DEPT.
FACILITIES ENGINEERING DEPARTMENT/3M
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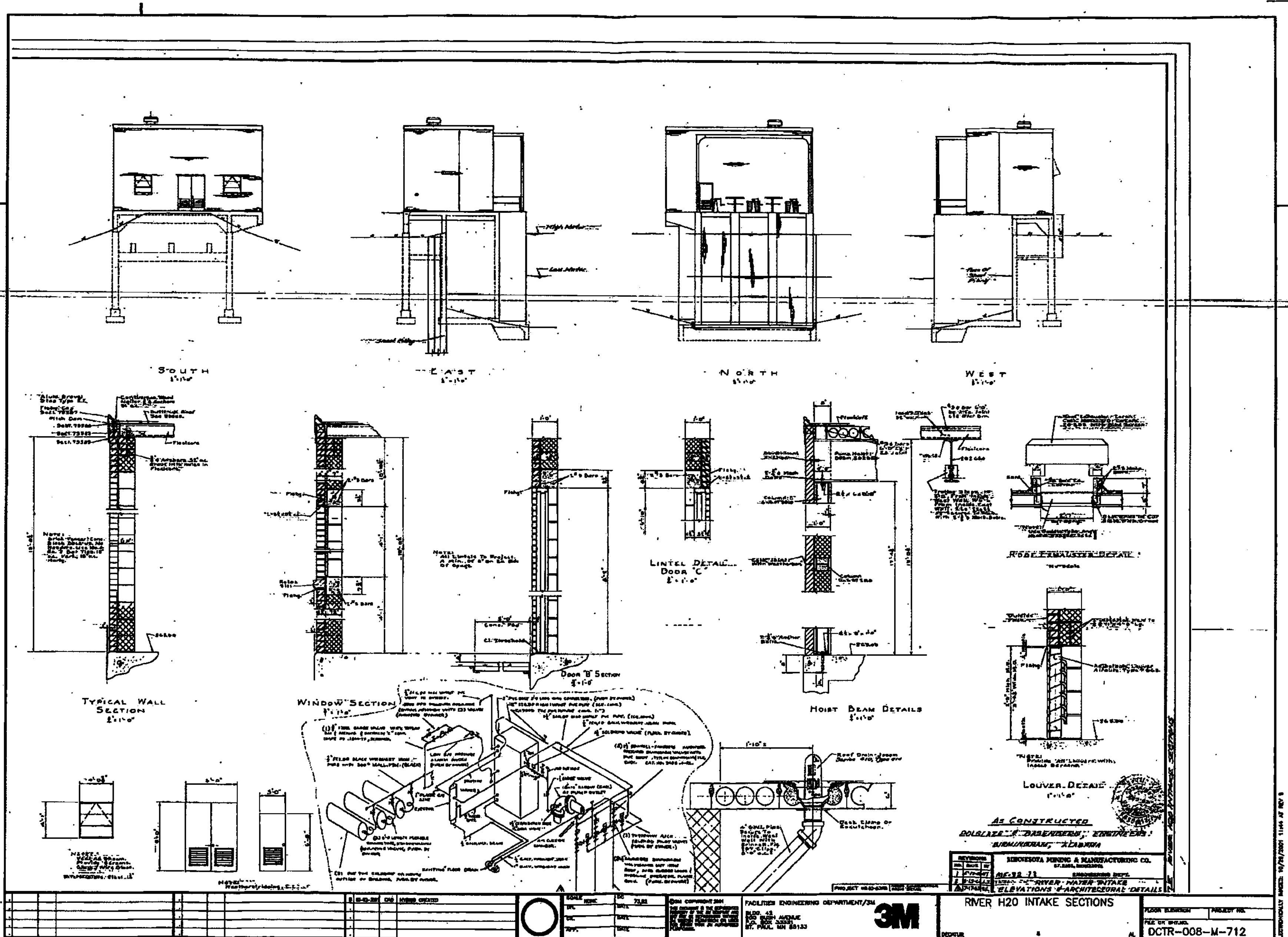
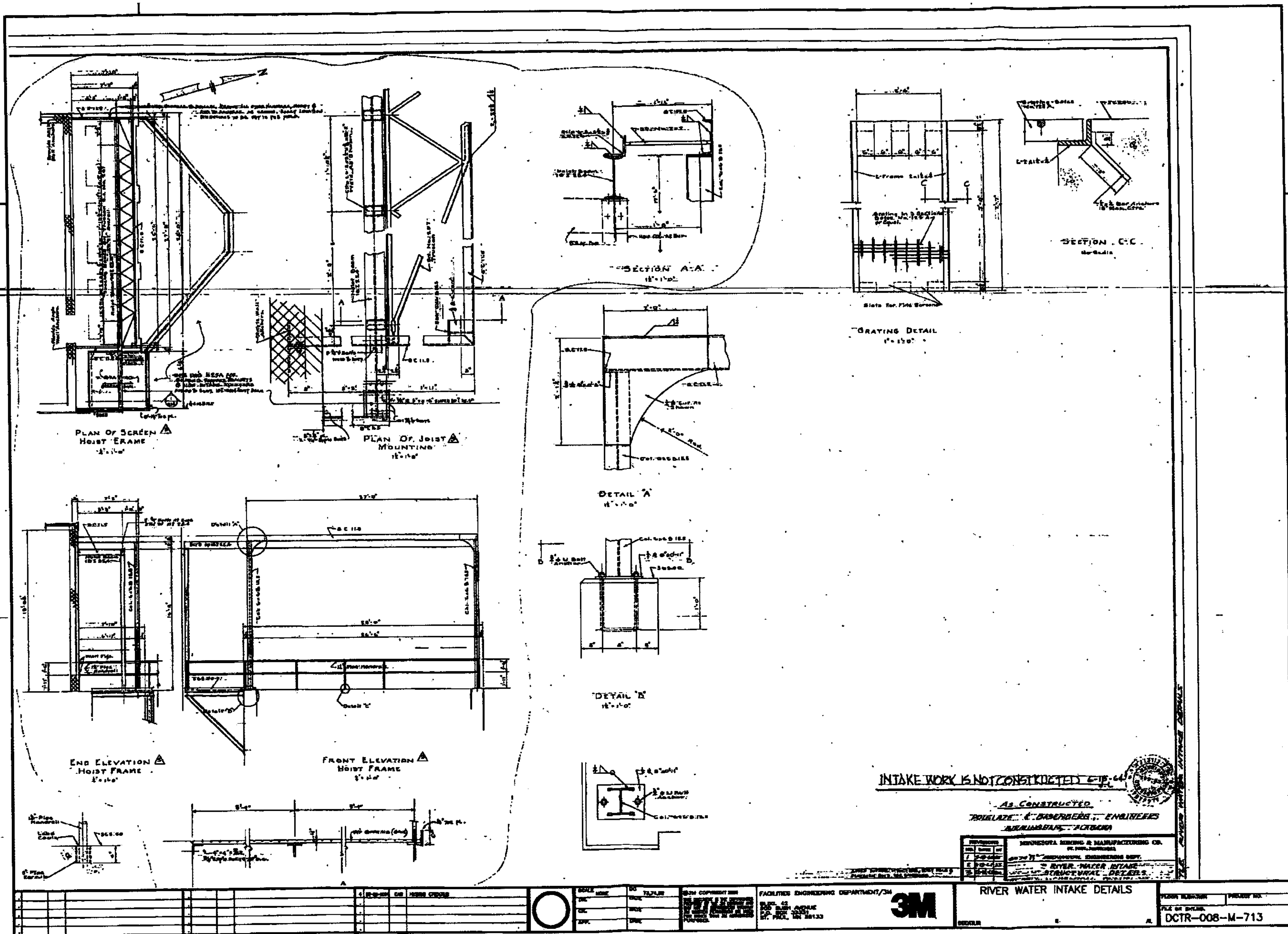
RIVER WATER INTAKE DETAILS
DCTR-008 M 711


South
East
North
West
High Water
Low Water
Typical Wall Section
Window Section
Door "B" Section
Lintel Detail Door "C"
Hoist Beam Details
Roof Exhauster Detail
Louver Detail
As Constructed
Dolbeare & Dasenberg, Engineers
Birmingham, Alabama
Minnesota Mining & Manufacturing Co.
River Water Intake Elevations & Architectural Details
Facilities Engineering Department/3M
3M
RIVER H20 INTAKE SECTIONS
DCTR-008-M-712



PLAN OF SCREEN HOIST FRAME
PLAN OF JOIST MOUNTING
SECTION A-A
GRATING DETAIL
SECTION C-C
DETAIL "A"
DETAIL "B"
END ELEVATION HOIST FRAME
FRONT ELEVATION HOIST FRAME
INTAKE WORK IS NOT CONSTRUCTED
As Constructed
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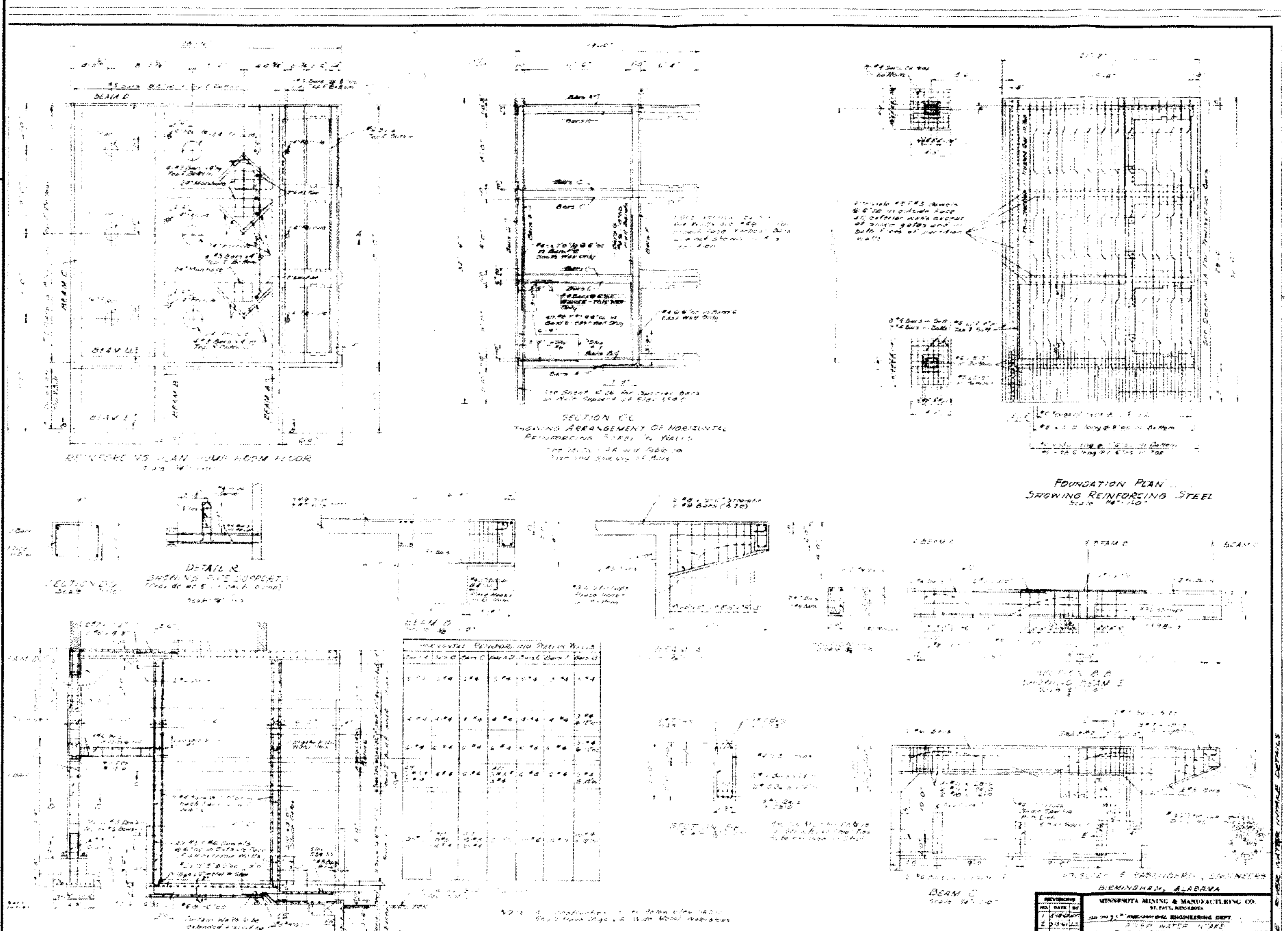
3M
RIVER WATER INTAKE DETAILS
DCTR-008-M-713



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RIVER WATER INTAKE DETAILS

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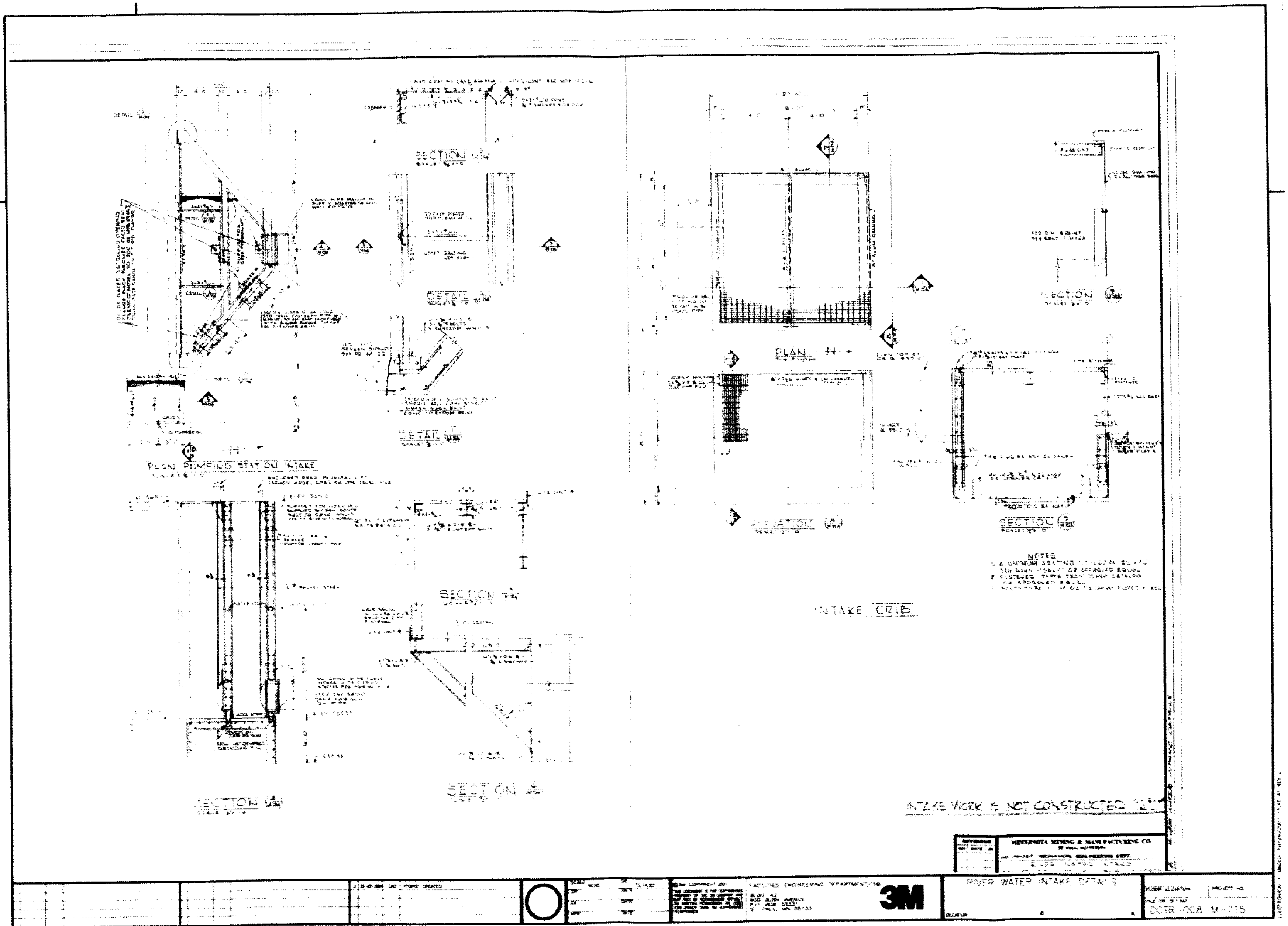
DCTR-0C8-M-714


PLAN - PUMPING STATION INTAKE
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DETAIL
PLAN
ELEVATION
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INTAKE WORK IS NOT CONSTRUCTED
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RIVER WATER INTAKE DETAILS
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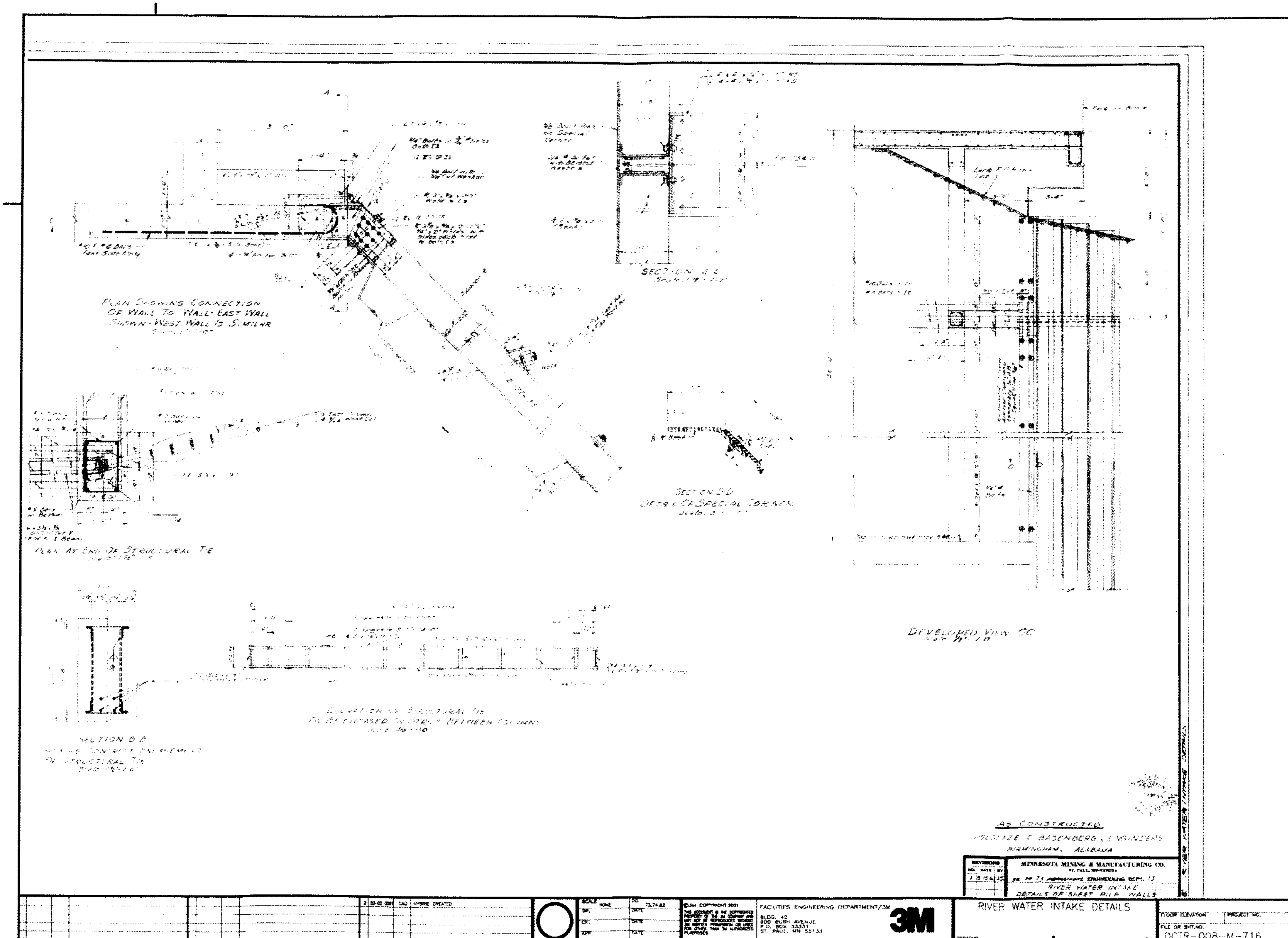
PLAN SHOWING CONNECTION OF WALL TO WALL - EAST WALL SHOWN - WEST WALL IS SIMILAR
SECTION A-A
SECTION D-D DETAIL OF SPECIAL CORNER
DEVELOPED VIEW C-C
PLAN AT END OF STRUCTURAL TIE
SECTION B-B
ELEVATION OF STRUCTURAL TIE
AS CONSTRUCTED
BIRMINGHAM, ALABAMA
MINNESOTA MINING & MANUFACTURING CO.
RIVER WATER INTAKE
DETAILS OF SHAFT PILE WALLS
HYBRID CREATED
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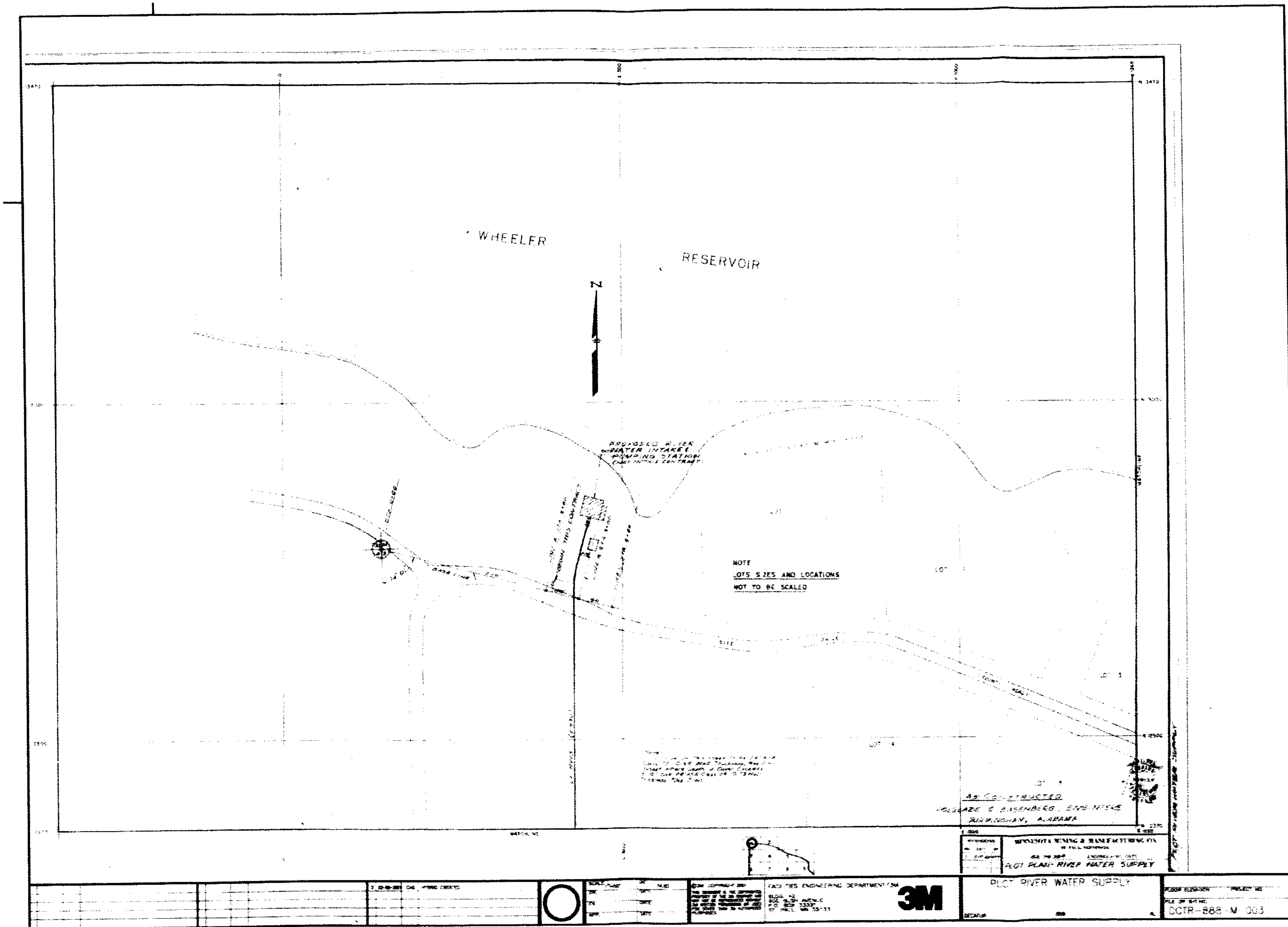
RIVER WATER INTAKE DETAILS
DECATUR
FLOOR ELEVATION
PROJECT NO.
FILE OR SHT. NO.
DCTR-008-M-716



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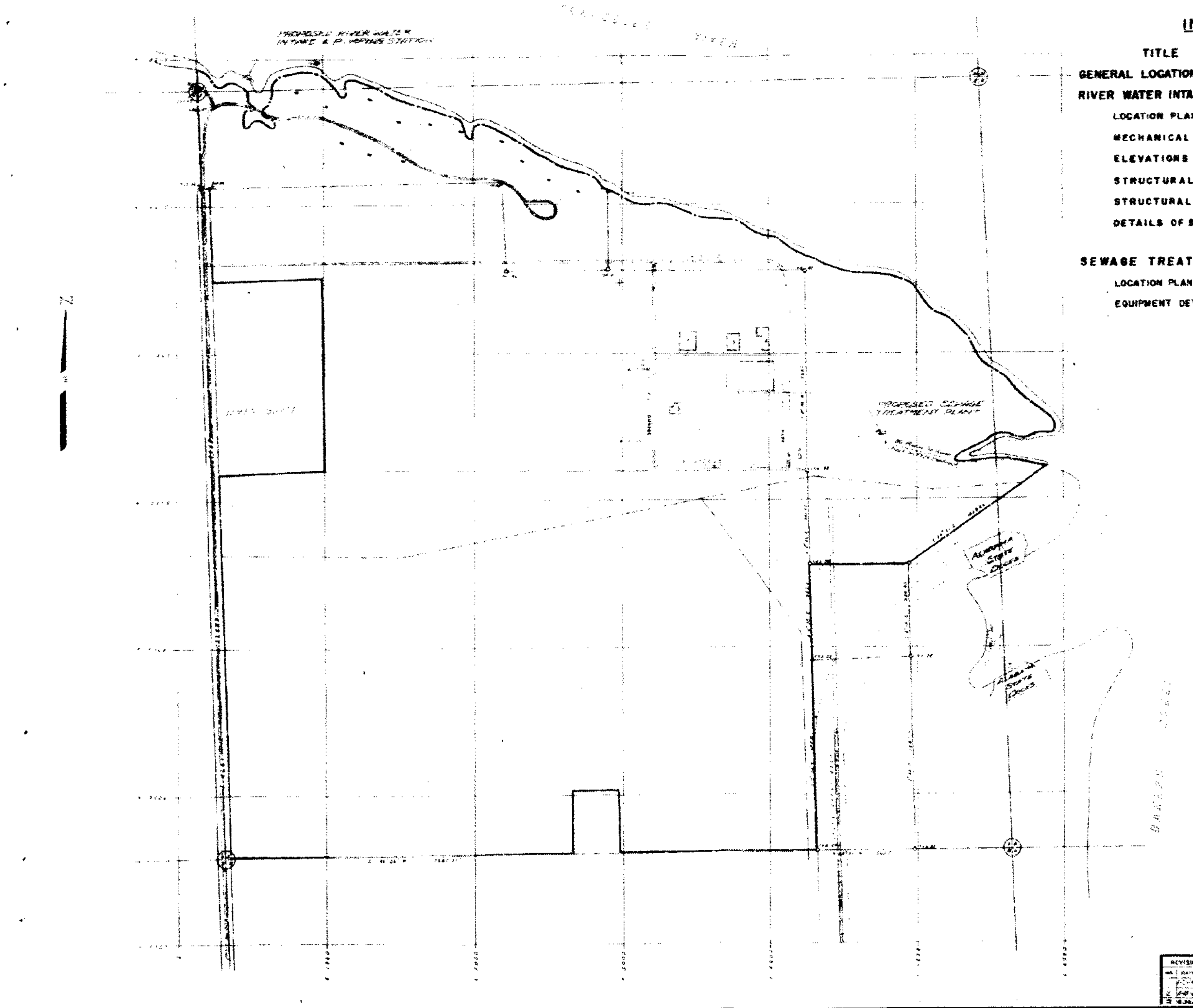
N
PROPOSED RIVER WATER INTAKE PUMPING STATION
NOTE
LOTS SIZES AND LOCATIONS
NOT TO BE SCALED
As Constructed
Bursaze & Basenberg, Engineers
Birmingham, Alabama
MINNESOTA MINING & MANUFACTURING CO.
PLOT PLAN: RIVER WATER SUPPLY
FACILITIES ENGINEERING DEPARTMENT
3M
PLOT RIVER WATER SUPPLY
DCTR-888-M-003



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AS CONSTRUCTED
POLGLAZE & BASENBERG, ENGINEERS
BIRMINGHAM ALABAMA

MINNESOTA MINING & MANUFACTURING CO.
ST. PAUL, MINNESOTA
70, 12, 69, 74, 73, 74 ENGINEERING DEPT.
RIVER WATER INTAKE AND SEWAGE TREATMENT PLANT

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RIVER WATER INTAKE SEWAGE TREATMENT
DECATUR 888 AL

FILE OR SHT. NO. DCTR-888-M-020

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Hogan Lovells

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004
T +1 202 637 5600
F +1 202 637 5910
www.hoganlovells.com

April 3, 2019

CONTAINS CONFIDENTIAL BUSINESS INFORMATION

ELECTRONIC AND FIRST CLASS MAIL

Ms. Beverly Banister
Director
Air, Pesticides and Toxics Management Division
United States Environmental Protection Agency, Region 4
Mail Code: 9T25
Atlanta, GA 30303-8960
banister.beverly@epa.gov

Re: 3M Company's Voluntary Disclosure of Non-Compliance with Section 5(e) of the Toxic Substances Control Act

Dear Ms. Banister:

On behalf of 3M Company ("3M"), I am writing to voluntarily disclose non-compliance with Section 5(e) of the Toxic Substances Control Act ("TSCA"), 15 U.S.C. § 2604(e), at 3M's Decatur, Alabama plant. The Decatur plant manufactures, *inter alia*, intermediate chemicals, perfluorobutanesulfonamide ("FBSA") and fluorinated sulfonamide alcohol ("FBSEE").

3M is authorized to manufacture, process and use FBSA and FBSEE at its Decatur plant pursuant to the terms of a November 2, 2009 United States Environmental Protection Agency ("EPA") Consent Order ("Consent Order"), in which EPA identifies FBSA as P09-0477 [1-Butanesulfonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-] and FBSEE as P09-0485 [1-Butanesulfonamide, 1,1,2,2,3,3,4,4,4-nonafluoro-N,N-bis(2-hydroxyethyl)-]. That Consent Order contains a "Release to Water" provision, which states as follows:

> "The Company is prohibited from any predicted or purposeful release of the PMN substances P09-0477 and P09-0485, or any waste stream from manufacturing, process and use containing these substances into waters of the United States."

Consent Order at p. 7. Through self-investigation, 3M has discovered that the Decatur plant has released FBSA and may have released FBSEE from its manufacturing operations to the Tennessee River in non-compliance with the Consent Order's release to water provision.

Due to these concerns, 3M has ceased both its FBSA and FBSEE manufacturing operations at its Decatur plant as well as any associated waste stream releases from those operations. 3M is working diligently to fully investigate the source(s) of the release(s) and to develop corrective actions to ensure such releases do not recur. As we work to fully investigate this situation, we would appreciate the opportunity in the near future to meet with you and your staff to discuss and our findings and our efforts to ensure that 3M remains in permanent, consistent compliance with the Consent Order.

Sincerely,

Adam M. Kushner

Adam M. Kushner, Esq.
Partner
Hogan Lovells US LLP
555 Thirteenth St., N.W.
Washington, DC 20004
Telephone: 202-637-5724
adam.kushner@hoganlovells.com

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#3

Hogan Lovells

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004
T +1 202 637 5600
F +1 202 637 5910
www.hoganlovells.com

April 26, 2019

ELECTRONIC AND FIRST CLASS MAIL

Mr. Leif Palmer, Esq.
Regional Counsel
United States Environmental Protection Agency
Region 4
Atlanta, GA 30303-8960
Palmer.Leif@epa.gov

Re: 3M Company's Confidential Business Information Related to April 3, 2019 Letter

Dear Mr. Palmer:

I am writing, on behalf of 3M Company ("3M"), to substantiate 3M's claim that the contents of its April 3, 2019 letter ("April 3 letter") contains confidential business information the disclosure of which will cause substantial harm to 3M. Therefore, 3M respectfully requests that this information be treated as confidential business information under 40 C.F.R. Part 2, Subpart B ("Confidentiality of Business Information").

The contents of 3M's April 3 letter, the Consent Order (titled "Consent Order and Determinations Supporting Consent Order") referenced therein, as well as the June 30, 2009 Pre-Manufacturing Notices ("PMN") for TS-LD4249 and TS-PS3208 relating to the Consent Order, include 3M "Confidential Business Information" which is not publicly known or of general knowledge in the trade or business, and thus have been marked as "Confidential Business Information" and should be treated as such.

The information labeled as "Confidential Business Information" in the April 3 letter relates to the PMN substances and methods of processing the PMN substances to form derivative products, which are all unique to 3M and maintained in secrecy.

In general, 3M produces and uses the PMN substance in the manufacture of 3M products in an industry where 3M has many competitors. Those competitors might try to determine how the 3M products are made, including what precursors, ingredients or processes are used. This activity by 3M's competitors would deprive 3M of the trade secret competitive advantage it has in marketing its products, and result in the loss of 3M sales and/or profitability in its products and investments, causing substantial harmful effects to 3M's competitive position.

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The "Confidential Business Information" also relates to processes or process details that are proprietary to 3M, including proprietary production equipment, manufacturing processes, and process conditions, as well as the chemical identity of raw materials and by-products, the magnitude of 3M's business and 3M's manufacturing capabilities.

The "Confidential Business Information" derives independent economic value from not being generally known or ascertainable by 3M's competitors in the industry and other entities that could obtain economic value from the public disclosure of such information.

3M "Confidential Business Information" is customarily held in confidence and is not available for public viewing. 3M takes significant measures to protect the confidentiality of its trade secrets, including: (1) disclosure only to those 3M employees who have a need to know, and to other persons, such as vendors, who are under contractual obligation to hold the information in confidence; (2) controlled access to the 3M's facilities where the information is located and used, including but not limited to posted security guards at the entrance to 3M's facilities, the display of employee passes, and the escort of visitors to 3M's facilities; and (3) all available legal measures to protect the confidential information concerning the processes utilized at its facilities from disclosure to third parties.

These steps are regularly taken in filings made with governmental and regulatory agencies (including the United States Environmental Protection Agency ("EPA")) and in dealings with 3M's customers and suppliers. 3M intends to continue to take these measures to protect the information in its April 3 letter as "Confidential Business Information."

3M has invested substantial research and development in creating and developing the proprietary equipment, processes, and chemical compositions embodied in its trade secrets and "Confidential Business Information." Public disclosure of such "Confidential Business Information" could be used by 3M competitors to improperly gain an economic competitive advantage, substantially and irreparably harming 3M.

For all of these reasons, 3M respectfully requests that pursuant to 40 C.F.R. Part 2, Subpart B, EPA treat as "Confidential Business Information" 3M's April 3 letter, the Consent Order referenced therein, and the PMNs for TS-LD4249 and TS-PS3208.

Please do not hesitate to contact me should you have any questions regarding the above.

Sincerely,

Adam M. Kushner

Adam M. Kushner
Hogan Lovells US LLP
555 Thirteenth Street NW
Washington, DC 20004
Telephone: 202-637-5624

Fax: 202-637-5910
Email: adam.kushner@hoganlovells.co

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

April 26, 2019

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Via U.S. and Electronic Mail

Adam M. Kushner, Esq.
Hogan Lovells US LLP
555 Thirteenth St., N.W.
Washington, DC 20004
adam.kushner@hoganlovells.com

RE: 3M Disclosure of Non-Compliance with Toxic Substances Control Act (TSCA) at 3M's Decatur, Alabama Plant

Dear Mr. Kushner:

This letter responds to your letter of April 3, 2019 to Ms. Beverly Banister, Director of the Air, Pesticides and Toxic Management Division in Region 4, regarding the disclosure of non-compliance with TSCA. In the letter you indicated that 3M is working to investigate the situation and is seeking an opportunity to discuss your findings with EPA. Please note that, as of December 9, 2015, EPA launched an electronic portal for the submission and automatic processing of such self-disclosures. The portal is called "eDisclosure" and can be accessed at **http://www.epa.gov/cdx**. It replaces EPA's process of accepting and responding to hard-copy disclosures, allowing for faster and more efficient processing of disclosures under EPA's Audit Policy (formally titled "Incentives for Self- Policing: Discovery, Disclosure, Correction and Prevention of Violations." 65 FR 19.618, April 11, 2000).

If a company submits a disclosure into eDisclosure within 21 days of discovery, and subsequently completes the compliance report certifying it meets the Audit Policy conditions, the system automatically generates an Acknowledgement Letter that is sent to the company. 3M's disclosure will not be eligible for an Acknowledgement Letter via the eDisclosure system because the electronic submittal is occuring after the 21-day discovery deadline. In this circumstance, 3M has the option to disclose to eDisclosure, receive an Ineligibility Letter (21-day prompt disclosure has passed) and attach information to explain discovery, disclosure and correction of noncompliance. EPA requests that 3M use the CDX eDisclosure system to provide additional information concerning disclosure of potential noncompliance, so that any EPA personnel reviewing this disclosure will have a centralized location of information to fully understand the circumstances surrounding the disclosure. EPA will take into account all facts and circumstances surrounding such violations, including the fact that 3M submitted a disclosure, if and when EPA considers taking enforcement action for environmental violations.

We understand that 3M has requested a May 16, 2019 meeting to discuss this matter. In order to ensure EPA has the necessary information on the Audit Policy aspects of this meeting, we request you input information into eDisclosure by May 8, 2019, and send an email to Mark Garvey, an attorney on my staff, at Garvey.Mark@epa.gov to let him know you have completed the eDisclosure process. EPA also requests that 3M attach to its eDisclosure, and provide to Mark Garvey, a confidential business information (CBI)-redacted version of the April 3, 2019 disclosure letter. The redacted letter is required under the CBI regulations and will be treated as an enforcement sensitive communication. In addition, EPA requests that all CBI claims be substantiated. When considering whether certain information is public, please keep in mind that the National Pollution Discharge Elimination System permit for 3M at this facility may be a public source of information.

EPA Headquarters and EPA Region 4 are coordinating closely on this matter. Regarding any information 3M believes would inform EPA's TSCA compliance investigation, please submit it to the following individuals. For issues regarding the eDisclosure, please contact Mark Garvey at (202) 564-4168 or by email as indicated above. For other issues concerning this matter, please contact Susan Hansen at (404) 562-9700, a Supervisory Attorney Advisor in EPA Region 4. Please do not provide CBI through the email or in the CDX system.

Sincerely,

James Y. Miles, Acting Associate Director
Waste and Chemical Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance

cc: Mark Garvey
Susan Hansen

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#5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C., 20460

OFFICE OF
CHEMICAL SAETY AND
POLLUTION PREVENTION

May 5, 2019

via email

Adam M. Kushner, Esquire
Hogan Lovells US LLP
555 Thirteenth Street NW
Washington, DC 20004

Dear Mr. Kushner:

The U.S. Environmental Protection Agency ("EPA" or "Agency") is seeking to determine the entitlement to confidentiality of the information submitted on behalf of 3M to EPA in a letter dated April 3, 2019, and the substantiation of the confidential business information (CBI) claims in a subsequent letter dated April 26, 2019. The purpose of this letter is to notify you that EPA may make a confidentiality determination concerning the information you have claimed as CBI. If you feel that the information is entitled to confidential treatment, you must make the showings below with specific reference to those portions of the information you consider confidential.

We appreciated the opportunity to speak with you regarding this matter on May 1, 2019. During that conversation, you clarified that you are asserting only the specific chemical identities referenced in the letters as CBI. You also clarified that all other information in the letters is considered non-confidential.

For each item that you continue to claim as CBI, please answer the following questions, providing as much detail as possible. Please be specific when identifying and substantiating the information subject to your claim. Any information not specifically identified as subject to a confidentiality claim and substantiated as such in your response to this letter may be disclosed without further notice to you.

Please include with your responses an updated, redacted version of the April 3, 2019 letter with all CBI (chemical identity references in this instance) removed. EPA will refer to the two substances identified in the April 3, 2019 letter by the non-CBI, "generic" names identified in the two TSCA section 5 cases, which are also the non-confidential names listed on the public version of the TSCA Inventory.

Your comments in response to these questions will be used by the EPA to determine whether the information has been shown to be entitled to confidential treatment:

1. For what period of time do you request that the information be maintained as confidential, e.g., until a certain date, until the occurrence of a specified event, or permanently? If the occurrence of a specific event will eliminate the need for confidentiality, please specify that event.

2. Information submitted to the EPA becomes stale over time. Why should the information you claim as confidential be protected for the time period specified in your answer to question #1?

3. What measures have you taken to protect the information claimed as confidential? Have you disclosed the information to anyone other than a governmental body or someone who is bound by an agreement not to disclose the information further? If so, why should the information be considered confidential?

4. Is the information contained in any publicly available material such as the Internet, publicly available databases, promotional publications, annual reports, or articles? If so, specify which.

5. Is there any means by which a member of the public could obtain access to the information? Is the information of a kind that you would customarily not release to the public?

6. Has any governmental body made a determination as to the confidentiality of the information? If so, please attach a copy of the determination.

7. For each item or category of information claimed as confidential, *explain with specificity* why release of the information is likely to cause substantial harm to your competitive position. Explain the specific nature of those harmful effects, why they should be viewed as substantial, and the causal relationship between disclosure and such harmful effects. How could your competitors make use of this information to your detriment?

8. Do you assert that the information is submitted on a voluntary or a mandatory basis? Please explain the reason for your assertion. If you assert that the information is voluntarily submitted information, please explain whether the information is the kind that would customarily not be released to the public.

9. Whether you assert the information as voluntary or involuntary, please address why disclosure of the information would tend to lessen the availability to the EPA of similar information in the future.

10. If you believe any information to be (a) trade secret(s), please so state and explain the reason for your belief. Please attach copies of those pages containing such information with brackets around the text that you claim to be (a) trade secret(s).

11. Explain any other issue you deem relevant (including, if pertinent, reasons why you believe that the information you claim to be CBI is not emission data or effluent data).

12. Does this particular chemical substance leave the site of manufacture (including import) in any form, *e.g.*, as product, effluent, emission? If so, what measures have been taken to guard against the discovery of its identity.

13. If the chemical substance leaves the site in a product that is available to the public or your competitors, can the chemical substance be identified by analysis of the product?

14. Is this chemical substance publicly known to be in U.S. commerce by a specific chemical identity or name that is consistent with its listing on the confidential portion of the TSCA Inventory? If yes, explain why the chemical identity should still be afforded confidential status.

Please note that *you bear the burden of substantiating your confidentiality and trade secret claim(s).* Generalized or conclusory statements will be given little or no weight in EPA's determination on the confidentiality of the information you claim to be CBI.

Your comments must be postmarked or hand delivered to this office, or emailed to sherlock.scott@epa.gov, by the 15th working day after your receipt of this letter. You may seek an extension of time to submit your comments to this office, but the request must be made before the end of the 15-day period. Except in extraordinary circumstances, no extension will be approved. Failure to submit your comments within that time will be regarded as a waiver of your confidentiality claim or claims, and the EPA may release the information.

If you wish to claim any information that you provide in your response to this letter to itself be confidential, you must mark the response "**CONFIDENTIAL**" or with a similar designation and must bracket all text in the response that you so claim. Information so designated will be disclosed by the EPA only to the extent allowed by, and by means of the procedures set forth in, 40 C.F.R. Part 2, Subpart B. If you fail to claim the information provided in your response as confidential, it may be made available to the public without further notice to you.

Please include in your response the certification at the bottom of the communication signed by an authorized official.

Should you have any questions concerning this matter, please call me at 202-564-8257.

Sincerely,

Scott M. Sherlock, Attorney Advisor
Environmental Assistance Division
Office of Pollution Prevention and Toxics

Enclosure

Certification

I hereby certify to the best of my knowledge and belief that all information entered on this form is complete and accurate.

I further certify that, pursuant to 15 U.S.C. § 2613(c), for all claims for confidentiality made with this submission, all information submitted to substantiate such claims is true and correct, and that it is true and correct that

(i) My company has taken reasonable measures to protect the confidentiality of the information;
(ii) I have determined that the information is not required to be disclosed or otherwise made available to the public under any other Federal law;
(iii) I have a reasonable basis to conclude that disclosure of the information is likely to cause substantial harm to the competitive position of my company; and
(iv) I have a reasonable basis to believe that the information is not readily discoverable through reverse engineering.

Any knowing and willful misrepresentation is subject to criminal penalty pursuant to 18 U.S.C. § 1001.

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3M | EPA May 16, 2019

Name	Company	Phone #	e-mail
Adam Kushner	Hogan Lovells	202-637-5724	adam.kushner@hoganlovells.com
Michelle Howell	3M	864-275-3866	mlhowell@mmm.com
Robert Caplan	EPA	404-562-9520	caplan.robert@epa.gov
Kimberly Bingham	EPA	404-562-9055	bingham.kimberly@epa
VERNE GEORGE		404-562-8988	george.verne@epa.gov
Gopal Timsina		(404) 562-9017	timsina.gopal@epa.gov
Leif Palmer	EPA	4/562 9548	palmer.leif@epa.gov
Suzanne Rubini	EPA	4/562-9674	rubini.suzanne@epa.gov
Carol Kemker		404-562-8975	kemker.carol@epa.gov
Susan Hansen	EPA	404-562-9700	hansen.susan@epa.gov
ROBERTO BUSO	EPA	2-8530	BUSO.ROBERTO@EPA
COURTNEY ENLOE	3M	651-216-1366	CCENLOE@MMM.COM
Chris Goralski	3M	651-497-4266	ctgoralski@mmm.com
Robin Higgs	3M	256-476-5617	RRHIGGS1@mmm.com

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Hogan Lovells

Hogan Lovells US LLP
Columbia Square
555 Thirteenth Street, NW
Washington, DC 20004
T +1 202 637 5600
F +1 202 637 5910
www.hoganlovells.com

May 23, 2019

ELECTRONIC AND FIRST-CLASS MAIL

Scott M. Sherlock
Attorney-Advisor
Environmental Assistance Division
Office of Pollution Prevention and Toxics
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
sherlock.scott@epa.gov

Re: 3M Company's Confidential Business Information Substantiation Letter

Dear Mr. Sherlock:

I am writing, on behalf of 3M Company ("3M"), in response to your letter dated May 5, 2019, requesting that 3M respond to questions designed to assist the United States Environmental Protection Agency ("EPA" or "Agency") in determining that certain information contained in 3M's April 3, 2019 letter to Beverly Banister, Director, Air, Pesticides and Toxics Management Division, is "confidential business information" ("CBI") within the meaning of 40 C.F.R. § 2.204 et seq.

In that letter, 3M voluntarily disclosed information related to a release to water provision contained in a TSCA 5(e) Consent Order and Determinations Supporting Consent Order ("Consent Order"), dated November 5, 2009. Under the terms of the Consent Order, 3M is authorized to manufacture, process and use perfluorobutanesulfonamide ("FBSA" or "P-09-0477") and fluorinated sulfonamide alcohol ("FBSEE" or "P-09-0481) at its Decatur plant.

After careful consideration, 3M is no longer asserting that the non-generic chemical names of the fluorinated chemicals identified in the April 3 letter are CBI. In addition, 3M is not asserting that the presence of these chemicals at 3M's Decatur, Alabama facility is CBI. Accordingly, 3M has not provided responses to the CBI substantiation questions for the April 3 letter as requested by the EPA in their May 5, 2019 letter. However, 3M continues to maintain a CBI claim over the Consent Order as well as the two June 30, 2009 Pre-Manufacturing Notices ("PMN") (TS-PS3208 for P-09-0477 and TS-LD4249 for P-09-0485) upon which the Consent Order is based, both of which are expressly referenced in 3M's April 3 letter.

The EPA has previously determined that both the Consent Order and the two PMNs contain CBI, and 3M continues to maintain a CBI claim with respect to the content of all three documents. 3M's reference to the Consent Order and both PMNs in 3M's April 3 letter does not constitute a waiver or disclosure of any such CBI. Courts have held specifically that the idea that "the government waives protection of a document's contents by acknowledging its existence would turn FOIA upon its head; for example, every document listed in a *Vaughn* index is "acknowledged to exist" but does not become disclosable if a FOIA exemption applies." Venkataram v. Office of Info. Policy, No. CIV. 09-6520, 2013 WL 5674346, at *2 (D.N.J. Oct. 16, 2013), aff'd, 590 F. App'x 138 (3d Cir. 2014).

As discussed in 3M's letter dated April 26, 2019, 3M has invested substantial research and development in creating the proprietary equipment, processes, and chemical compositions embodied in its CBI. Public disclosure of 3M CBI could enable 3M competitors to improperly gain an economic competitive advantage, substantially and irreparably harming 3M.

In a March 20, 2015 letter, 3M requested that EPA transfer P-09-0477 from the confidential section to the public section of the TSCA Inventory (See March 20, 2015 letter from Jonathan Gerber to United States EPA Office of Pollution Prevention and Toxics, attached hereto)[1]. 3M has not made a similar request with respect to P-09-0485. Nonetheless, 3M asserted in its March 20 letter, and continues to assert now, that all other claims of confidentiality in the PMN for P-09-0477, including but not limited to, details about the manufacturing process, byproducts, molecular weight, safety data sheets, batch information, production volume projections, end user process diagrams, etc., remain in effect. The logic of 3M's claim of confidentiality as outlined in its March 20 letter applies with equal force to the PMN for P-09-0485, as its manufacture, process and use is inextricably linked to the manufacture, process and use of P-09-0477. For the same reasons, the previously determined 3M confidential business information contained in the Consent Order must still be maintained as CBI.

Please contact the undersigned if you have any questions or need additional information.

Sincerely,

Adam M. Kushner

Adam M. Kushner, Esq.
Hogan Lovells US LLP
555 Thirteenth Street NW
Washington, DC 20004
Telephone: 202-637-5624
Email: adam.kushner@hoganlovells.com

Enclosure(s)

[1] The EPA has yet to effect that change.

May 23, 2019
Scott M. Sherlock, Attorney Advisor
Environmental Assistance Division
Office of Pollution Prevention and Toxics

Certification

I hereby certify to the best of my knowledge and belief that all information entered on this form is complete and accurate.

I further certify that, pursuant to 15 U.S.C. § 2613(c), for all claims for confidentiality made with this submission, all information submitted to substantiate such claims is true and correct, and that it is true and correct that

(i) My company has taken reasonable measures to protect the confidentiality of the information;
(ii) I have determined that the information is not required to be disclosed or otherwise made available to the public under any other Federal law;
(iii) I have a reasonable basis to conclude that disclosure of the information is likely to cause substantial harm to the competitive position of my company; and
(iv) I have a reasonable basis to believe that the information is not readily discoverable through reverse engineering.

Any knowing and willful misrepresentation is subject to criminal penalty pursuant to 18 U.S.C. § 1001.

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Acute Toxicity Evaluation of 3M's Decatur Plant Final Effluent

Test Dates May 22 – May 24, 2019

NPDES Permit #AL0000205

Submitted to

3M Environment, Health, Safety and Medical
EHS Laboratory
3M Center
Bldg 0260-05-N-17
Maplewood, MN 55144-1000

3M Project # GEN19-02-02

Pace Project# 12125136

Prepared by

Pace Analytical Services, LLC
4730 Oneota Street
Duluth, Minnesota 55807-2719

Submitted June 2019

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Report Authorization

Author: Dan Toms

Title: Bioassay Supervisor

Date: June 19, 2019

Signature: Dan Toms

EXECUTIVE SUMMARY

- The 3M Decatur, Alabama facility final effluent collected from Outfall DSN001 on May 20-21, 2019 supported acceptable *Pimephales promelas* (fathead minnow) and *Ceriodaphnia dubia* survival during the acute whole effluent toxicity (WET) test performed May 22-24, 2019. The DSN001 effluent was not acutely toxic and was observed to support test organism survival of 100% during the forty-eight-hour exposures for ambient and pH-controlled tests.

- The *Ceriodaphnia dubia* reference toxicant test performed concurrently with the effluent study met all minimum performance requirements and resulted in an endpoint value consistent with previous tests.

- The *Pimephales promelas* reference toxicant test performed concurrently with the effluent study met all minimum performance testing requirements and resulted in an endpoint value consistent with previous tests.

- The *Ceriodaphnia dubia* exposed to the controls, Decatur receiving water, and laboratory water (Treated Tap Water, TT), demonstrated 100 % survival for the ambient pH test and for the pH-controlled tests.

- The *Pimephales promelas* exposed to the controls, Decatur receiving water, and laboratory water (Treated Tap Water, TT), demonstrated 98-100 % survival for the ambient pH test and for the pH-controlled tests.

INTRODUCTION

At the request of 3M Environment, Health, Safety and Medical Operations, Pace Analytical Services, LLC, performed tests to assess the toxicity of final effluent from 3M's Decatur, Alabama Plant (Permit # AL0000205). The testing was performed to fulfill discharge permit quarterly monitoring requirements.

Static 48-hour acute toxicity tests exposing the microcrustacean cladoceran *Ceriodaphnia dubia* and fathead minnow (*Pimephales promelas*) to the Decatur effluent DSN001 and the receiving water (Tennessee River) were conducted. Parallel sets of tests were performed near the reported collection pH of the DSN001 effluent. The pH-controlled tests were conducted by adjusting the pH of the test solutions with dilute HCl. The adjusted test solutions were then placed into a five-gallon rectangular glass box with glass lid. A 2.5% carbon dioxide (CO_2)/ air gas mixture was then injected into the glass box to maintain the test pH near the collection pH.

TOXICITY TEST METHOD OVERVIEW

The toxicity tests were performed following methods described in the United States Environmental Protection Agency (USEPA) test manual, "Methods for Determining the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," Fifth Edition, 2002.

The pH-controlled tests were conducted following methods described in the USEPA guidance manual, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures," Second Edition, 1991.

Sample Collection, Shipping and Receipt

A composite sample of final effluent from Outfall DSN001 and a Tennessee River water grab sample were collected by ENERSOLV Corporation, (ESV), the day before the initiation of the test battery. The effluent sample from Outfall DSN001 was collected on May 20 (0700 H) – May 21 (0700 H), 2019 and the Tennessee River sample was collected on May 21 (1030 H), 2019. The cooler containing the DSN001 effluent sample and the Tennessee River Water sample was sealed with industrial tape prior to shipment and then shipped on ice by ESV to Pace Analytical via express courier (Federal Express air bill #7752 7579 3431). The ESV sampling personnel who collected the samples did not place a custody seal on the cooler prior to shipping to the laboratory.

The samples were received at Pace Analytical on May 22, 2019 at 1035 hours. Upon opening the shipping container, the DSN001 effluent and Tennessee River Water samples were inspected, and the Chain of Custody form was completed. Shipping temperature, pH, conductivity, total hardness, alkalinity, total residual chlorine, ammonia as N, total suspended solids, and total dissolved solids were measured and recorded for each sample.

The temperature values for the DSN001 effluent and Tennessee River Water during collection were documented on the chain of custody as 30.6 °C and 24.7 °C respectively. The temperatures at the time of receipt at the laboratory were 1.7 °C and 1.9 °C for the DSN001 effluent and Tennessee River Water samples, respectively. There was no evidence of ice formation in the samples. The total flow for the effluent during the collection was reported as 4.1 million gallons per day (MGD). The facility has a reported design flow of 13.5 MGD.

Sample Preparation

Before use, the samples were warmed to test temperature (24-26 °C). The remaining sample volumes were stored at 0 °C to 6°C.

The DSN001 effluent collection pH was reported as 7.2 on the accompanying chain of custody record. Therefore, the DSN001 effluent, Tennessee River Water and Treated Tap Water control samples were pH adjusted and tested at a suppressed pH during the pH-controlled tests. The pH control was achieved by maintaining the test vessels in an enclosed atmosphere with carbon dioxide.

Test Organisms

Ceriodaphnia dubia neonates, less then twenty-four-hours (<24 h) old at test initiation, were obtained from single organism cultures maintained at Pace Analytical following (USEPA) test manual, "Methods for Determining the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms," Fifth Edition, 2002. The original culture brood stock was obtained from the Aquatic BioSystems, Fort Collins, CO.

The fish (*Pimephales promelas*) used in the tests were obtained from Aquatox, Hot Springs, AR. The batch of fish was hatched on May 14, 2019 (within a 24-hour window). The fish were 8 days old at test initiation. During the pre-test period, they were fed newly hatched brine shrimp three times per day. The fish were not fed during the exposure period.

Following permit requirements, concurrent reference toxicity tests were performed with both species. The reference toxicity test consists of organisms being exposed to 5 concentrations of a sodium chloride solution at a 0.5 dilution series and a blank control. The biological dose response is measured to establish a control chart. The mean and upper and lower control limits (±2 Stdev) are recalculated with each successive test result.

Test Performance

The toxicity tests were initiated within 36 hours following effluent sample collection. The tests were initiated May 22, 2019 between 1453 and 1528 hours. The tests were completed on May 24, 2019 between 1435 and 1540 hours. Tables 1 and 2 summarize the test conditions. Test solution temperatures were measured directly from monitoring and test chambers. The non-controlled pH test temperature range was 24.7-25.4 and the pH-controlled tests temperature range was 24.1-25.7 °C.

The pH-controlled test solutions were adjusted by direct addition of dilute hydrochloric acid (HCl). The HCl was approximately 0.01 N and approximately 1 mL volume was required for adjusting pH of 1 L test solution. The pH-controlled test solution pH was maintained by placing the test vessels in an all glass air tight box followed by exposure to 2.5% carbon dioxide.

Conductivity was measured in the initial effluent and control exposures and pH, dissolved oxygen and temperature were measured in both the initial and final exposure periods.

Twenty-four-hour chemistry measurements were taken from monitoring chambers for the *Ceriodaphnia dubia* test and from aliquots of the fish test solutions. Forty-eight-hour final chemistry measurements were taken directly from each exposure replicate per test concentration following survival observations.

The light reading for the pH-controlled and non-controlled test on May 22 and 24, 2019 were between 52.4 and 61.1 ft-c., which is within the recommended range of 50-100 ft-c.

RESULTS

Routine Chemistry Results

Table 3 summarizes the results of arrival chemistry. None of the chemistry parameters indicated abnormal effluent quality for Outfall DSN001.

Toxicity Test Results

The chemistry parameters of pH, dissolved oxygen, and conductivity measured during each of the toxicity exposures were within the acceptable ranges specified by the USEPA test methodologies. Table 4 contains the pH, dissolved oxygen, conductivity, and temperature values obtained for the test solutions during the test battery. Mean values of the replicate measurements are shown in the tables for the final chemistries. Individual values can be found in the data package.

Organism survival results are given in Table 5. The laboratory Treated Tap Water, Tennessee River water, and Outfall DSN001 effluent supported acceptable (100%) invertebrate survival for the duration of the ambient pH and controlled pH test batteries.

The laboratory Treated Tap Water, Tennessee River water, and Outfall DSN001 effluent supported acceptable (98-100%) vertebrate survival for the duration of the ambient pH and controlled pH test batteries.

Sodium Chloride Reference Toxicity Results

The sodium chloride reference toxicity tests performed concurrently with the effluent study met minimum performance requirements for control survival and produced predictable concentration responses. The *Ceriodaphnia dubia* and fathead minnow reference tests produced a LC_{50} values within the range of past values.

Pace Analytical control charts containing acute *Ceriodaphnia dubia* and *Pimephales promelas* precision data for sodium chloride for the time of the WET study are shown in Tables 6 and 7, respectively. Graphical representation of Tables 6 and 7 precision data is shown in Figures 1 and 2.

CONCLUSIONS

The 3M Decatur, Alabama facility final effluent collected from Outfall DSN001 on May 20-21 and tested May 22-24, 2019 supported 100% survival for *Pimephales promelas* (fathead minnow) and *Ceriodaphnia dubia* under standard and pH-controlled test conditions.

TABLE 1. Summary of Test Conditions for *Ceriodaphnia dubia* During 3M Decatur Plant Whole Effluent Test

Type Test:	Static
Test Duration:	48 Hours
Temperature:	25 +/- 1 °C Actual Range 24.1–25.7 °C
Light Quality:	Ambient Laboratory Illumination
Photoperiod:	16 Hours Light, 8 Hours Darkness
Test Chamber Size and Composition:	30 mL Polystyrene Plastic; For pH Control Exposure, Test Chambers were Contained in Air-Tight All Glass Box with a CO_2 Enriched Headspace
Test Solution Volume:	20 mL
Renewal Frequency:	None
Age of Test Organisms:	<24 Hours Old
No. of Organisms per Test Chamber:	5
No. of Replicate Chambers per Concentration:	4
No. of Organisms per Concentration:	20
Feeding Regime:	None
Light Intensity	50-100 ft. candles (The recorded range was 52.4-61.1)
Test Solution Aeration:	None
Control Waters:	Primary: Receiving Water (Tennessee River Water) Secondary: Treated Tap Water (TT)
Test Concentrations:	1 Effluent Concentration and Controls
Dilution Series:	100%, Receiving Water Control, and TT Control
Endpoints:	Mortality
Holding Requirements:	Samples are Used Within 36 Hours of Completion of the Sampling Period
Test Acceptability Criterion:	10% or Less Mortality or Immobilization in the Controls

TABLE 2. Summary of Test Conditions for *Pimephales promelas* (Fathead Minnow) During 3M Decatur Plant Whole Effluent Test

Type Test:	Static
Test Duration:	48 Hours
Temperature:	25 +/- 1 °C Actual Range 24.1–25.7 °C
Light Quality:	Ambient Laboratory Illumination
Photoperiod:	16 Hours Light, 8 Hours Darkness
Test Chamber Size and Composition:	250 mL Plastic; For pH Control Exposure, Test Chambers were Contained in Air-Tight Glass Box with a CO_2 Enriched Headspace
Test Solution Volume:	200 mL
Renewal Frequency:	None
Age of Test Organisms:	8 Days Old at Test Initiation (All Hatched Within a 24-Hour Window)
No. of Organisms per Test Chamber:	10
No. of Replicate Chambers per Concentration:	4
No. of Organisms per Concentration:	40
Feeding Regime:	None During the Test Period
Light Intensity	50-100 ft. candles (The recorded range was 52.4-61.1)
Test Solution Aeration:	None
Control Waters:	Primary: Receiving Water (Tennessee River Water) Secondary: Treated Tap Water (TT)
Test Concentrations:	1 Effluent Concentration and Controls
Dilution Series:	100%, Receiving Water Control, and TT Control
Endpoints:	Mortality
Holding Requirements:	Samples are Used Within 36 Hours of Completion of the Sampling Period
Test Acceptability Criterion:	10% or Less Mortality in the Controls

TABLE 3. Values for Arrival Chemistry Measurements Performed with 3M Decatur Plant Final Effluent DSN001 and Tennessee River Water

Sample ID	Arrival Date	Arrival Temp. (°C)	pH (S.U.)	Cond.[a] (µmhos/cm)	Total Alkalinity (mg $CaCO_3$/L)	Total Hardness (mg $CaCO_3$/L)	NH_3-N (mg/L)	TRC[b] (mg/L)	TSS[c] (mg/L)	TDS[d] (mg/L)
Outfall DSN001	05/22/19	1.7	7.8	542	64.4	151	0.38	<0.020	5.6	308
TN River Upstream	05/22/19	1.9	7.8	135	57.2	66.2	<0.10	< 0.020	9.6	80.0

[a] Cond. = Specific Conductance
[b] TRC = Total Residual Chlorine
[c] TSS = Total Suspended Solids
[d] TDS = Total Dissolved Solids

TABLE 4. Values for Chemistry Measurements Obtained During Acute Toxicity Tests with 3M Decatur Plant Final Effluent DSN001 and Tennessee River Water

Ambient pH Tests

Sample ID	Initial				Final[a]					
	C. dubia & Pimephales promelas				*C. dubia*[b]			*Pimephales promelas*[b]		
	pH (S.U.)	DO (mg/L)	Temp. (°C)	Cond. (µmhos/cm)	pH (S.U.)	DO (mg/L)	Temp. (°C)	pH (S.U.)	DO (mg/L)	Temp. (°C)
Reference Control, (TT)	7.4	7.9	25.0	113	7.7/7.8	8.1/8.4	25.1/24.8	7.7/7.9	7.6/7.9	25.2/25.4
TN River Water	7.7	8.6	24.7	142	8.0/8.0	8.1/8.4	25.0/24.8	7.9/8.0	7.5/7.9	25.1/25.4
DSN001	7.7	8.5	25.3	548	8.0/8.1	8.1/8.3	24.9/24.9	8.0/8.1	7.4/7.9	25.1/25.4

[a] Mean Value from Replicates
[b] 24-Hour Values/48-Hour Values

pH-Controlled Tests

Sample ID	Initial				Final[a]					
	C. dubia & Pimephales promelas				*C. dubia*[b]			*Pimephales promelas*[b]		
	pH (S.U.)	DO (mg/L)	Temp. (°C)	Cond. (µmhos/cm)	pH (S.U.)	DO (mg/L)	Temp. (°C)	pH (S.U.)	DO (mg/L)	Temp. (°C)
Reference Control (TT)	7.2	7.4	24.4	117	7.6/7.1	8.5/8.2	24.2/24.4	7.4/7.2	7.5/7.8	24.2/24.2
TN River Water	7.1	8.6	25.7	152	7.8/7.4	8.5/8.2	24.2/24.2	7.5/7.3	7.6/7.7	24.3/24.3
DSN001	7.3	8.3	25.7	566	7.8/7.4	8.4/8.2	24.2/24.1	7.6/7.4	7.4/7.7	24.3/24.3

[a] Mean Value from Replicates
[b] 24-Hour Values/48-Hour Values

TABLE 5. Cumulative Percentage Survival for *Ceriodaphnia dubia* and *Pimephales promelas* after 48-Hour Exposure to 3M Decatur Plant Final Effluent DSN001 and Tennessee River Water

Test Dates	Test Type	DSN001		Tennessee River Water		Reference Control[a]	
		C. dubia	*Pimephales promelas*	*C. dubia*	*Pimephales promelas*	*C. dubia*	*Pimephales promelas*
05/22-05/24 2019	Standard pH Non-controlled	(20/20)[b] 100[c]	(40/40)[b] 100[c]	(20/20)[b] 100[c]	(39/40)[b] 98[c]	(20/20)[b] 100[c]	(40/40)[b] 100[c]
	pH Controlled	(20/20)[b] 100[c]	(40/40)[b] 100[c]	(20/20)[b] 100[c]	(40/40)[b] 100[c]	(20/20)[b] 100[c]	(40/40)[b] 100[c]

[a] Reference Control was TT
[b] # Alive/# Exposed
[c] Cumulative Percent Survival

TABLE 6. Precision of *Ceriodaphnia dubia* Acute Reference Toxicant Testing

Date	LC_{50} (g/L)	Mean (g/L)	SD	CV (%)	Lower Limit (g/L)	Upper Limit (g/L)
01/31/18	2.20	--	--	--	--	--
02/06/18	1.83	2.02	--	--	--	--
02/21/18	1.77	1.93	0.23	12.0	1.47	2.40
03/06/18	2.50	2.08	0.34	16.4	1.39	2.76
03/20/18	2.10	2.08	0.30	14.2	1.49	2.67
04/18/18	1.67	2.01	0.31	15.6	1.39	2.64
04/25/18	1.70	1.97	0.31	15.7	1.35	2.59
05/01/18	2.33	2.01	0.31	15.6	1.39	2.64
06/12/18	2.34	2.05	0.31	15.3	1.42	2.67
07/18/18	1.83	2.03	0.30	15.0	1.42	2.63
08/08/18	1.89	2.01	0.29	14.4	1.43	2.60
11/28/18	1.68	1.99	0.29	14.8	1.40	2.57
03/20/19	1.83	1.97	0.28	14.4	1.41	2.54
04/17/19	1.74	1.96	0.28	14.3	1.40	2.52
05/09/19	1.77	1.95	0.27	14.1	1.40	2.49
05/22/19	1.71	1.93	0.27	14.1	1.39	2.47

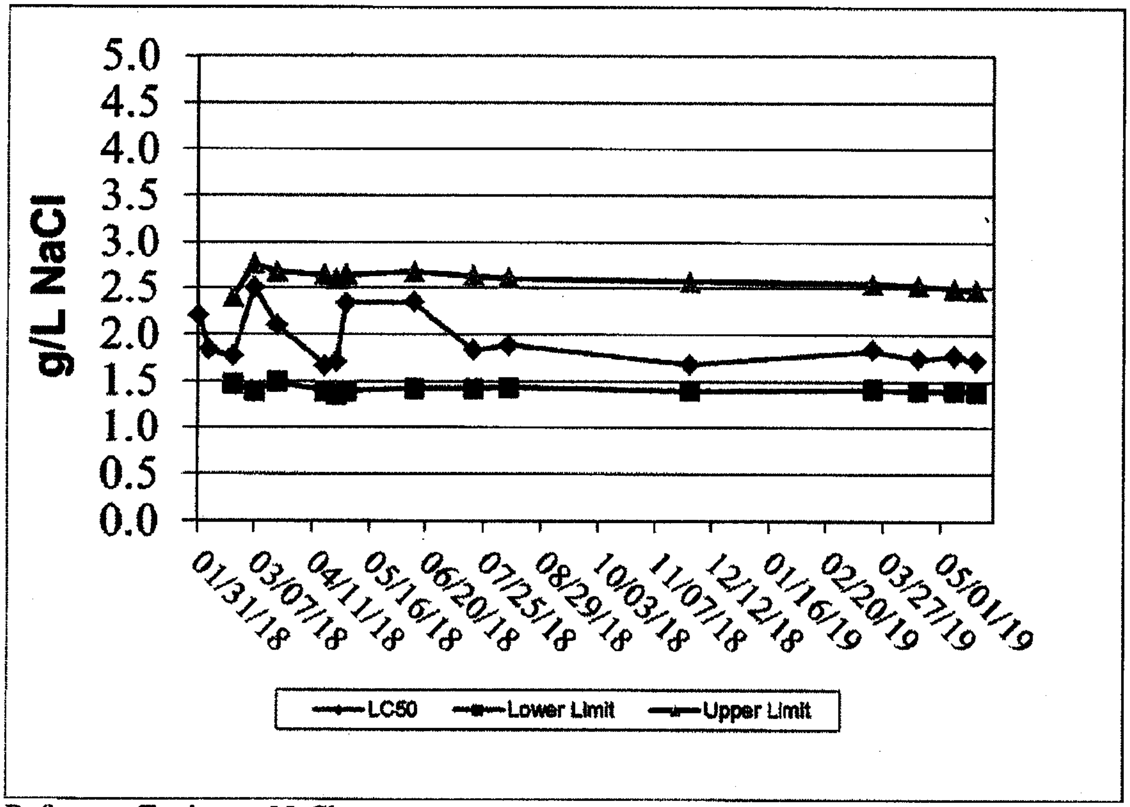
Reference Toxicant - NaCl
Organism Source – ABS

TABLE 7. Precision of *Pimephales promelas* Acute Reference Toxicant Testing

Date	LC_{50} (g/L)	Mean (g/L)	SD	CV (%)	Lower Limit (g/L)	Upper Limit (g/L)
04/25/18	7.07	--	--	--	--	--
06/26/18	7.07	7.07	--	--	--	--
07/17/18	7.07	7.07	0.00	0.0	7.07	7.07
07/25/18	7.32	7.13	0.13	1.8	6.88	7.38
08/08/18	6.95	7.10	0.14	1.9	6.82	7.37
09/25/18	7.07	7.09	0.12	1.7	6.85	7.34
11/28/18	6.95	7.07	0.12	1.7	6.82	7.32
01/25/19	7.07	7.07	0.11	1.6	6.84	7.30
03/20/19	7.32	7.10	0.14	1.9	6.83	7.37
04/17/19	7.07	7.10	0.13	1.8	6.84	7.35
05/22/19	7.07	7.09	0.12	1.7	6.85	7.34

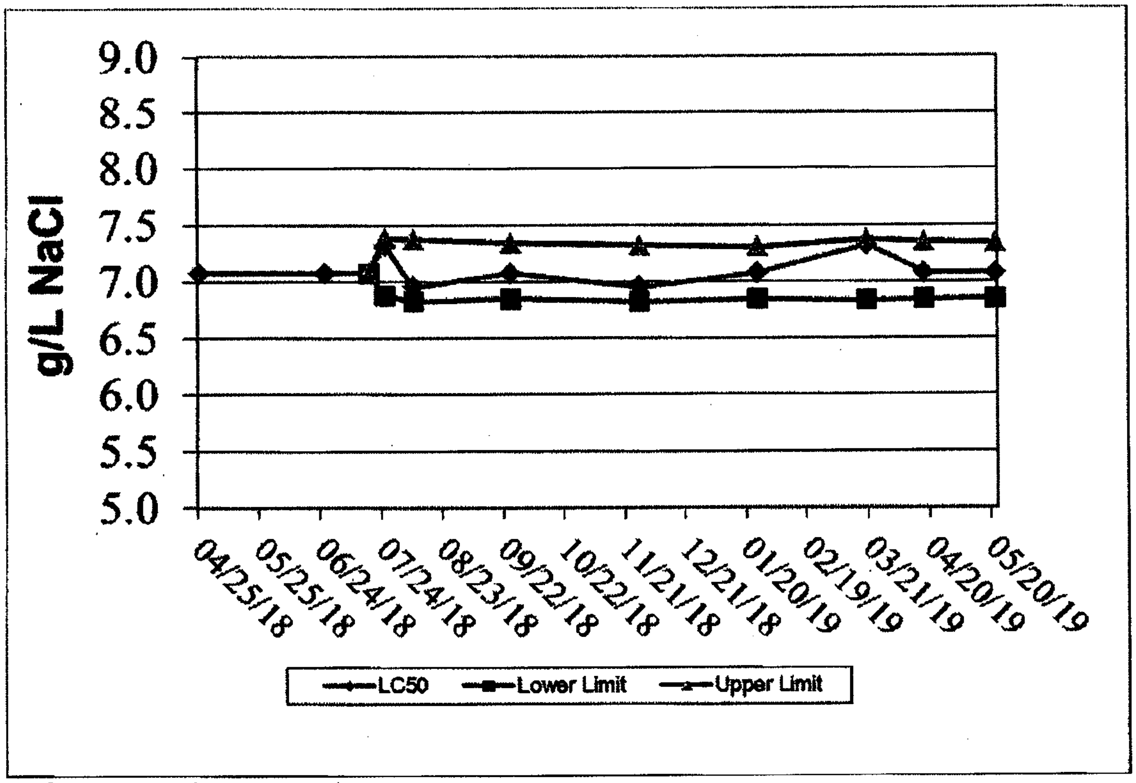
Reference Toxicant - NaCl
Organism Source - Aquatox

FIGURE 1. Precision of *Ceriodaphnia dubia* Acute Reference Toxicant Testing



Reference Toxicant - NaCl

FIGURE 2. Precision of *Pimephales promelas* Acute Reference Toxicant Testing



Reference Toxicant - NaCl

APPENDIX A

ADEM Toxicity Test Report Summary

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT SUMMARY

1. GENERAL:

NPDES PERMIT NO.: 0000205 DSN: 001 COUNTY: Morgan

Permitee: 3M

Facility Name: 3M Decatur

Agent submitting Report: Stacee Bland

Lab Conducting Toxicity Test(s): Pace Analytical Services, LLC (Tel: 218-336-2120)

Months To Test: January – March, April – June, July – September, October – December

This Report for Toxicity Test(s) Required for the Month of: May 2019

Scheduled Test(s): Yes X No ____ Accelerated Test(s): Yes ____ No X

Accelerated Test Number ____ of ____ For Failed Scheduled Test Date: ____

Test Type Required: 48-Hr Acute Screening: X Hr Acute Definitive: ____

Short-term Chronic Screening: ____ Short-term Chronic Definitive: ____

	Test Organism: *Pimephales promelas*					Test Organism: *Ceriodaphnia dubia*				
Sam No.	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1 (DSN 001)	05/22/19	15:00	05/24/19	15:40		05/22/19	14:53	05/24/19	15:40	
2 (River)	05/22/19	15:00	05/24/19	15:40	Yes	05/22/19	14:53	05/24/19	15:40	Yes
3 (TT)	05/22/19	15:00	05/24/19	15:40		05/22/19	14:53	05/24/19	15:40	

2A. SUMMARY OF RESULTS FOR SCREENING TEST:

		Test Number											
		(1)			(2)			(3)			(4)		
Test Org.	Eff. Conc.	Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro	Sur	Rep	Gro
C.d.	100%	Pass			Pass			Pass			Pass		
P.p.	100%	Pass			Pass			Pass			Pass		

~~2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:~~

Test Organism	Test Solution Concentration (%)						LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	BOD5 mg/L	TSS mg/L	NH3 mg/L	pH su	Alk mg/L	Hard mg/L	TRC mg/L
TT (5319)	NA	NA	<0.10	7.8	42.9	41.0	<0.020
River Water	NA	9.6	<0.10	7.8	57.2	66.2	<0.020
100% DSN 001	NA	5.6	0.38	7.8	64.4	151	<0.020

~~Municipal Facilities Only~~

Sample ID	Arsenic (□g/L)	Cadium (□g/L)	Chromium (□g/L)	Copper (□g/L)	Lead (□g/L)	Hexavalent Chromium (□g/L)
Sample ID	Mercury (□g/L)	Nickel (□g/L)	Silver (□g/L)	Zinc (□g/L)	Total Cyanide (□g/L)	Other(s) (□g/L)

Chemical Analysis Performed By (LAB): Pace Analytical Services, LLC

Instantaneous Flow: (1) ____ GPM ____ ____

Total 24-Hour Flow: (1) 4.1 MGD (2) ____ MGD (3) ____ MGD

Comments: Flow rate provided on Chain of Custody form.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF RESPONSIBLE OFFICIAL: ____ DATE: ____

3M Project # GEN19-02-02
Permit # AL0000205

Facility Name: 3M Decatur NPDES #: 0000205 DSN: 001 Date: June 19, 2019

4. SAMPLE COLLECTION:

Split Samples: N/A **NO** Yes ______ (explain) ______

Samples Collected as Specified in the NPDES Permit: Yes **X** No (explain) ______

Receiving Water: Tennessee River Water Design Flow: 13.5 (MGD)

Sample ID	Sample(s) Collected MM/DD/YY HHMM - MM/DD/YY HHMM	Arrival Temp (C)	Used in Test(s) MM/DD/YY - MM/DD/YY
DSN 001	05/20/19 0700 - 05/21/19 0700	1.7	05/22/19 – 05/24/19
River Water	05/21/19 1030	1.9	05/22/19 – 05/24/19

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries				
			Hard. mg/L	Alk. mg/L	pH su	Cond. mg/L	@ °C
TT	NA	NA	41.0	42.9	7.8	113	25

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)		
C. dubia	<24-hour	Pace Analytical	0 (TT)	0 (River)	100 (DSN 001)
Pimephales promelas	8 Day	Aquatox, Hot Springs, AR	0 (TT)	0 (River)	100 (DSN 001)

Test Species	Test Vessel Type	Vessel Vol. (mL)	Solution Vol. (mL)	Org. / Test Vessel	Replicates per Conc.
C. dubia	30 mL plastic	30	20	5	4
Pimephales promelas	250 mL plastic	250	200	10	4

Test Species	Temp. Range (°C)	D.O. Range (mg/L)	pH Range (su)	Light Intensity Avg. (ft-c)
C. dubia	24.1 – 25.7	7.4 – 8.6	7.1 -8.1	52.4 - 61.1
Pimephales promelas	24.1 – 25.7	7.3 - 8.6	7.1 – 8.1	52.4 - 61.1

7. FEEDING:

Not Fed: **X** Fed Daily: ______ Fed Irregular: ______ (Explain in comments below)

Brine Shrimp: Fed ______ mL Suspension of Newly Hatched Larvae ______ Times Daily.

YCT: Fed ______ mL Suspension Containing ______ mg/L TSS Daily.

Algae: Fed ______ mL Suspension Containing ______ Algal Cells/mL Daily.

COMMENTS: ______

3M Project # GEN19-02-02
Permit # AL0000205

Facility Name: 3M Decatur NPDES #: 0000205 DSN: 001 Date: June 19, 2019

8. REFERENCE TOXICANT TESTS:

Toxicant: Sodium chloride Source: Fisher Scientific CAS#: 7647-14-5

Solution concentration unit: mg/L ___ g/L X % ___ other (specify): ______

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Cont. to Highest Conc.)						
C. dubia	05/22/19 – 05/24/19	TT	0 (TT)	0.625 g/L	1.25 g/L	2.5 g/L	5 g/L	10 g/L	
FHM	05/22/19 – 05/24/19	TT	0 (TT)	1.25 g/L	2.5 g/L	5 g/L	10 g/L	20 g/L	

Test Org.	Results	95% Confidence Interval	Upper and Lower CUSUM Chart Control Limit (This Test)	Number (N)
C. dubia	1.71 g/L	1.39-2.47 g/L	1.52-1.92 g/L	16
FHM	7.07 g/L	6.85-7.34 g/L	Limits are not reliable.	11

9. TEST CONDITION VARIABILITY:

9.A. Deviations From Standard Test Conditions:

9.B. Test Solution Manipulations or Test Modifications:

10. REQUIRED REPORT ATTACHMENTS:

Attach copies of Chain-of-Custody Forms, Reference Toxicant Tests, and Raw Data (Bench Sheets) Pertaining to Physical, Chemical, and Biological Measurements for All Tests. Include Suspended, Interrupted, or Discontinued Toxicity Tests Data.

COMMENTS:

Facility Name: 3M Decatur NPDES #: 0000205 DSN: 001 Date: June 19, 2019

11.A. ACUTE SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*
ACUTE TOXICITY INDICATED: YES ____ NO X

NO ACUTE STATISTICAL ANALYSIS NECESSARY: X

Ambient pH / pH Controlled

SOLUTION CONC.(%)	0 (TT)	0 (River)	100
MORTALITY (%)	0 / 0	0 / 0	0 / 0

PERMITTED MORTALITY RATE (%): 50% for DSN 001
Normally Distributed: YES ____ NO ____
Test Statistic: ____ Critical Value: ____ (Parametric)
Equal variance: ____ Unequal variance: ____
F Statistic: ____ Critical F: ____
t - Test Statistic: ____ t - Test Critical Value: ____
Sample Rank Sum: ____ # Reps.: ____ Critical Rank Sum: ____ (Non - Parametric)
COMMENTS: **Above statistical analyses not required/applicable**

TEST ORGANISM: *Pimephales promelas*
ACUTE TOXICITY INDICATED: YES ____ NO X

NO ACUTE STATISTICAL ANALYSIS NECESSARY: X

Ambient pH / pH Controlled

SOLUTION CONC.(%)	0 (TT)	0 (River)	100
MORTALITY (%)	0 / 0	2 / 0	0 / 0

PERMITTED MORTALITY RATE (%): 50% for DSN 001
Normally Distributed: YES ____ NO ____
Test Statistic: ____ Critical Value: ____ (Parametric)
Equal variance: ____ Unequal variance: ____
F Statistic: ____ Critical F: ____
t - Test Statistic: ____ t - Test Critical Value: ____
Sample Rank Sum: ____ # Reps.: ____ Critical Rank Sum: ____ (Non - Parametric)
COMMENTS: **Above statistical analyses not required/applicable**

APPENDIX B

Data Packages

Pace Analytical Services, LLC

Client: 3M Decatur

State: Alabama

Pace Project #: 12125136

Test: Acute Toxicity Evaluation

Test Initiation Date: May 22, 2019

Test Termination Date: May 24, 2019

ENVIRONMENTAL SAMPLE TEST INFORMATION

Date: May 22, 2019
Client: 3M Decatur
Pace Project #: 12125136
Dilution Water: None (River Water and Treated Tap controls)
Test Chamber: 1oz plastic, 250 mL Plastic
Food: None
Required Testing Temperature: 24-26°C
Test Organism(s)/Age: *Ceriodaphnia dubia* <24 hour, Fathead Minnow 8 day/ Aquatox
C. dubia: Incubator #1 and Bath # 5
Fathead Minnow: Incubator #1 and Bath # 5
C dubia Culture ID: ACD-129
Comments:
Effluent and control waters tested at ambient pH and at controlled pH
Effluent collection pH reported as 7.2 , Effluent flow reported as 4.1 MGD
Light Meter Readings (FC)

Date / Init / Reading	Incubator #1	APR 5/22/19 ~~Bath #1~~ Bath #5
5/22/19 APR	59.2	52.7
5/23/19 APR	61.1	52.4
5/24/19 APR	54.9	57.5

Pace Analytical
[redacted]
Client Color Code: Black

TOXICITY TEST RENEWAL FORM

CLIENT: 3M Decatur PACE PROJECT #: 12125136

TEST: Acute Toxicity TEST INITIATION DATE: May 22, 2019

ORGANISM: *Ceriodaphnia dubia*, Fathead Minnow TEST TERMINATION DATE: May 24, 2019

				Age		Source	
Test Organism		*C. dubia*		<24 hours		Pace	
		FHM		8 days		Aquatox	
TEST DAY		0 (Test Initiation)		1		2	
DATE		5/22/19		5/23/19		5/24/19	
		pH Cont	pH Non Cont	pH Cont	pH Non Cont	pH Cont	pH Non Cont
Renewal/Reading (±1 hour of initiation)	*C. dubia*	1453	1528	1413	1527	1435	1540
	Initials	APR	APR	APR	APR	APR	ALB
	FHM	1500	1525	1416	1451	1438	1540
	Initials	APR	[illegible]	APR	APR	APR	ALB
Feeding / Food IDs	*C. dubia*	0955 140350 180095		N/A		N/A	
	Initials	CJA		N/A		N/A	
	FHM	1215		N/A		N/A	
	Initials	[illegible]		N/A		N/A	
Sample/Control Info.	Primary Control	**Tennessee River Water** (12125136-002)		N/A		N/A	
	Secondary Control	Treated Tap 5319		N/A		N/A	
	Sample #	#1		N/A		N/A	
	Effluent Filtered (Yes / No)	No		N/A		N/A	
	Initials	[illegible]		APR		ALB	

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Client Color Code: Black

INITIAL CHEMISTRIES

CLIENT: 3M Decatur

Pace Project #: 12125136

TEST: Acute Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM(S): *Ceriodaphnia dubia*, Fathead Minnow

TEST TERMINATION DATE: May 24, 2019

pH Non-Controlled

	Date/Time/Initials
	5/22/19 1341 APR
CONCENTRATION: Secondary Control – Treated Tap	
pH (su)	7.39
DO (mg/L)	7.9
Cond (umhos/com)	113
Temp (°C)	~~24.6~~ APR 5/22/19 25.0
CONCENTRATION: Primary Control – River Water	
pH (su)	7.72
DO (mg/L)	8.6
Cond (umhos/com)	142
Temp (°C)	24.7
CONCENTRATION: 100 Percent Effluent	
pH (su)	7.73
DO (mg/L)	8.5
Cond (umhos/com)	548
Temp (°C)	25.3

Client Color Code: Black

INITIAL CHEMISTRIES

CLIENT: 3M Decatur Pace Project #: 12125136

TEST: Acute Toxicity TEST INITIATION DATE: May 22, 2019

ORGANISM(S): Ceriodaphnia dubia, Fathead Minnow TEST TERMINATION DATE: May 24, 2019

pH Controlled

	Date/Time/Initials
	5/22/19 APR
CONCENTRATION: Secondary Control – Treated Tap	
pH (su)	7.15
DO (mg/L)	7.4
Cond (umhos/com)	117.0
Temp (°C)	~~25.8~~ APR 5/22/19 24.4
CONCENTRATION: Primary Control – River Water	
pH (su)	7.12
DO (mg/L)	8.6
Cond (umhos/com)	152
Temp (°C)	25.7
CONCENTRATION: 100 Percent Effluent	
pH (su)	7.29
DO (mg/L)	8.3
Cond (umhos/com)	566
Temp (°C)	25.7

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Client Color Code: Black

FINAL CHEMISTRIES

CLIENT: 3M Decatur

Pace Project #: 12125136

TEST: Acute Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM: Ceriodaphnia dubia

TEST TERMINATION DATE: May 24, 2019

pH Non-Controlled

	24 Hour 5/23/19 APR 1507	48 Hour 5/24/19 APR / 1607			
Treated Tap	**From Monitoring Chamber (24 hour values)**	**A**	**B**	**C**	**D**
pH (su)	7.71	7.78	7.81	7.77	7.76
DO (mg/L)	8.1	8.3	8.4	8.4	8.3
Cond (umhos/com)	126	128	127	129	127
Temp (°C)	25.1	24.8	24.8	24.8	24.8
River Water	**From Monitoring Chamber (24 hour values)**	**A**	**B**	**C**	**D**
pH (su)	7.98	8.04	8.05	8.00	7.97
DO (mg/L)	8.1	8.3	8.3	8.4	8.4
Cond (umhos/com)	156	169	166	162	163
Temp (°C)	25.0	24.8	24.9	24.8	24.8
100%	**From Monitoring Chamber (24 hour values)**	**A**	**B**	**C**	**D**
pH (su)	8.04	8.13	8.00	8.09	8.07
DO (mg/L)	8.1	8.3	8.3	8.3	8.4
Cond (umhos/com)	577	637	638	638	648
Temp (°C)	24.9	24.7	24.9	24.9	24.9

Pace Analytical

Client Color Code: Black

FINAL CHEMISTRIES

CLIENT: 3M Decatur

Pace Project #: 12125136

TEST: Acute Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM: Fathead Minnow

TEST TERMINATION DATE: May 24, 2019

pH Non-Controlled

	24 Hour 5/23/19 APR 1033				48 Hour 5/24/19 APR 1616			
Treated Tap	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
pH (su)	7.70	7.77	7.73	7.73	7.85	7.88	7.86	7.85
DO (mg/L)	7.6	7.6	7.5	7.6	7.9	7.9	7.9	7.9
Cond (umhos/com)	138	138	139	136	143	148	145	142
Temp (°C)	25.2	25.3	25.2	25.2	25.3	25.4	25.4	25.4
River Water	**A**	**B**	**C**	**D** APL 5/23/19	**A**	**B**	**C** 8.01 APL 5/24/19	**D**
pH (su)	7.90	7.89	7.88	~~7.~~ 8.00	7.95	7.97	~~8.04~~	8.10
DO (mg/L)	7.5	7.4	7.4	7.5	7.9	7.9	7.9	7.9
Cond (umhos/com)	167	163	164	173	173	172	177	187
Temp (°C)	25.2	25.2	25.1	25.0	25.4	25.4	25.4	25.3
100%	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
pH (su)	7.95	7.96	7.97	7.96	8.05	8.07	8.07	8.07
DO (mg/L)	7.3	7.4	7.4	7.4	7.9	7.9	7.9	7.8
Cond (umhos/com)	562	570	576	589	578	596	612	646
Temp (°C)	25.1	25.1	25.2	25.1	25.4	25.4	25.4	25.2

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Client Color Code: Black

FINAL CHEMISTRIES

CLIENT: 3M Decatur | Pace Project #: 12125136

TEST: Acute Toxicity | TEST INITIATION DATE: May 22, 2019

ORGANISM: Ceriodaphnia dubia | TEST TERMINATION DATE: May 24, 2019

pH Controlled

	24 Hour 5/23/19 AR 1443	48 Hour 5/24/19 AR 1542			
Treated Tap	**From Monitoring Chamber (24 hour values)**	**A**	**B**	**C**	**D** AR 5/24/19
pH (su)	7.59	7.09	7.09	7.13	~~7.1~~ 7.25
DO (mg/L)	8.5	8.2	8.2	8.2	8.2
Cond (umhos/com)	121	123 AR ~~126~~ 5/24/19	126	127	128
Temp (°C)	24.2	24.3	24.4	24.4	24.3
River Water	**From Monitoring Chamber (24 hour values)**	**A**	**B**	**C**	**D**
pH (su)	7.83	7.24	7.24	7.28	7.68
DO (mg/L)	8.5	8.2	8.2	8.2	8.2
Cond (umhos/com)	157	161	161	163 AR ~~168~~ 5/24/19	164
Temp (°C)	24.2	24.3	24.3	24.2	24.1
100%	**From Monitoring Chamber (24 hour values)**	**A**	**B**	**C**	**D**
pH (su)	7.80	7.45 ~~7.08~~ AR 5/24/19	7.40	7.41	7.41
DO (mg/L)	8.4	8.2	8.2	8.2	8.2
Cond (umhos/com)	567	566 ~~123~~ AR 5/24/19	579	580	579
Temp (°C)	24.2	24.1	24.1	24.1	24.1

Pace Analytical

Client Color Code: Black

FINAL CHEMISTRIES

CLIENT: 3M Decatur

Pace Project #: 12125136

TEST: Acute Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM: Fathead Minnow

TEST TERMINATION DATE: May 24, 2019

pH Controlled

	24 Hour 5/23/19 APR 1422				48 Hour 5/24/19 APR 1554			
Treated Tap	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
pH (su)	7.34	7.41	7.37	7.37	7.15	7.17	7.16	7.15
DO (mg/L)	7.5	7.4	7.5	7.6	7.8	7.8	7.8	7.8
Cond (umhos/com)	123	134	132	125	130	134	133	127
Temp (°C)	24.1	24.1	24.2	24.2	24.3	24.2	24.1	24.1
River Water	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
pH (su)	7.52	7.53	7.58	7.55	7.25	7.28	7.30	7.30
DO (mg/L)	7.6	7.6	7.6	7.5	7.8	7.7	7.7	7.7
Cond (umhos/com)	162	164	167	161	163	166	169	164
Temp (°C)	24.2	24.2	24.3	24.3	24.2	24.3	24.3	24.4
Treated Tap + Na Thiosulfate	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
pH (su)			APR					
DO (mg/L)			5/23/19	Non-	Applicable			
Cond (umhos/com)								
Temp (°C)								
100%	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
pH (su)	7.58	7.56	7.60	7.62	7.33	7.37	7.36	7.34
DO (mg/L)	7.4	7.3	7.5	7.5	7.8	7.7	7.7	7.7
Cond (umhos/com)	564	569	568	569	559	571	572	572
Temp (°C)	24.1	24.3	24.3	24.3	24.2	24.2	24.3	24.3

Pace Analytical

Client Color Code: Black

ACUTE TOXICITY DATA LOG

Client: 3M Decatur	Species: *Ceriodaphnia dubia*
Project #: 12125136	Age: <24 Hours
Test: Acute Toxicity **pH Non-Controlled**	No. Animals/No. Reps: 5/4
Test Initiation Date: May 22, 2019	Sources of Animals: Pace Anaytical
Investigator: Toms	Dilution Water/Control: River Water/TT
Test Duration: 48 Hours	Test Volume: 20 mL
Renewal: **None**	Required Test Temperature: 24-26 °C
	Minimum Control Survival ≥ 90%: (Yes / No)

Concentration	Survival Readings: (# alive out of # exposed from above unless shown otherwise)							
	24 Hour Replicate				**48 Hour** Replicate			
	A	**B**	**C**	**D**	**A**	**B**	**C**	**D**
Treated Tap	5	5	5	5	5	5	5	5
River Water	5	5	5	5	5	5	5	5
100%	5	5	5	5	5	5	5	5
	Dated Initials: 5/23/19 ARA				Dated Initials: 5/24/19 ALB			

Comments:

Pace Analytical

[redacted]

Client Color Code: Black

ACUTE TOXICITY DATA LOG

Client: 3M Decatur	Species: Fathead Minnow
Project #: 12125136	Age: 8 day
Test: Acute Toxicity **pH Non-Controlled**	No. Animals/No. Reps: 10/4
Test Initiation Date: May 22, 2019	Sources of Animals: Aquatox
Investigator: Toms	Dilution Water/Control: River Water/TT
Test Duration: 48 Hours	Test Volume: 200 mL
Renewal: **None**	Required Test Temperature: 24-26 °C
	Minimum Control Survival ≥ 90%: (Yes / No)

Concentration	Survival Readings: (# alive out of # exposed from above unless shown otherwise)															
	24 Hour Replicate				**48 Hour** Replicate				**72 Hour** Replicate				**96 Hour** Replicate			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Treated Tap	10	10	10	10	10	10	10	10								
River Water	10	10	9	10	10	10	9	10								
100%	10	10	10	10	10	10	10	10								
	Dated Initials 5/23/19 APR				Dated Initials 5/24/19 ALB				Dated Initials				Dated Initials			

Comments:

Client Color Code: Black

ACUTE TOXICITY DATA LOG

Client: 3M Decatur	Species: *Ceriodaphnia dubia*
Project #: 12125136	Age: <24 Hours
Test: Acute Toxicity **pH Controlled**	No. Animals/No. Reps: 5/4
Test Initiation Date: May 22, 2019	Sources of Animals: Pace Analytical
Investigator: Toms	Dilution Water/Control: River Water/TT
Test Duration: 48 Hours	Test Volume: 20 mL
Renewal: **None**	Required Test Temperature: 24-26 °C
	Minimum Control Survival ≥ 90%: (Yes / No)

pH Controlled

Concentration	Survival Readings: (# alive out of # exposed from above unless shown otherwise)							
	24 Hour Replicate				48 Hour Replicate			
	A	B	C	D	A	B	C	D
Treated Tap	5	5	5	5	5	5	5	5
River Water	5	5	5	5	5	5	5	5
100%	5	5	5	5	5	5	5	5
	Dated Initials 5/23/19 APR				Dated Initials 5/24/19 APR			

Comments:

Pace Analytical

[redacted]

Client Color Code: Black

ACUTE TOXICITY DATA LOG

Client: 3M Decatur	Species: Fathead Minnow
Project #: 12125136	Age: 8 day
Test: Acute Toxicity **pH Controlled**	No. Animals/No. Reps: 10/4
Test Initiation Date: May 22, 2019	Sources of Animals: Aquatox
Investigator: Toms	Dilution Water/Control: River Water/TT
Test Duration: 48 Hours	Test Volume: 200 mL
Renewal: **None**	Required Test Temperature: 24-26°C
	Minimum Control Survival ≥ 90%: (Yes / No)

pH Controlled

Concentration	Survival Readings: (# alive out of # exposed from above unless shown otherwise)															
	24 Hour Replicate				48 Hour Replicate				72 Hour Replicate				96 Hour Replicate			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
Treated Tap	10	10	10	10	10	10	10	10								
River Water	10	10	10	10	10	10	10	10								
100%	10	10	10	10	10	10	10	10								
	Dated Initials 5/23/19 APR				Dated Initials 5/24/19 APR				Dated Initials				Dated Initials			

Comments:

Last printed 5/22/2019 8:35:00 AM

APPENDIX C

Lab Report and Chain of Custody

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4730 Oneota Street
Duluth, MN 55807
(218) 727-6380

June 06, 2019

Patricia Tcaciuc
3M
Bldg 260-5N-17, 3M Center
Saint Paul, MN 55144

RE: Project: GEN19-02-02
Pace Project No.: 12125136

Dear Patricia Tcaciuc:

Enclosed are the analytical results for sample(s) received by the laboratory on May 22, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Toms

Dan J Toms
dan.toms@pacelabs.com
(218) 727-6380
Project Manager

Enclosures

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4730 Oneota Street
Duluth, MN 55807
(218) 727-6380

CERTIFICATIONS

Project: GEN19-02-02
Pace Project No.: 12125136

Virginia Minnesota Certification ID's
315 Chestnut Street, Virginia, MN 55792
Alaska Certification UST-107
Montana Certificate #CERT0103
Minnesota Dept of Health Certification #: 027-137-445
North Dakota Certification: # R-203
Wisconsin DNR Certification # : 998027470
WA Department of Ecology Lab ID# C1007

Duluth Minnesota Cerification ID's
4730 Oneota St., Duluth, MN 55807
Montana DHHS Certification #: CERT0102
Minnesota Dept of Health Certification #: 1610186
Wisconsin DNR Certification # : 999446800
North Dakota Certification #: R-105

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SAMPLE SUMMARY

Project: GEN19-02-02
Pace Project No.: 12125136

Lab ID	Sample ID	Matrix	Date Collected	Date Received
12125136001	Decatur Effluent	Water	05/21/19 07:00	05/22/19 10:35
12125136002	Decatur Receiving Water	Water	05/21/19 10:30	05/22/19 10:35
12125136003	Decatur Effluent (pH Adjusted)	Water	05/21/19 07:00	05/22/19 10:35

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SAMPLE ANALYTE COUNT

Project: GEN19-02-02
Pace Project No.: 12125136

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
12125136001	Decatur Effluent	SM 2540C (1997)	DW1	1	PASI-DUL
		EPA 350.1 rev.2 (1993)	DW1	1	PASI-DUL
		SM 4500-CL E (2000 & 2011)	ALB	1	PASI-DUL
		USGS I-3765-85 (1985)	DW1	1	PASI-DUL
		EPA 200.7	AK1	1	PASI-V
		SM 2320B	ZJT	1	PASI-V
		SM 2510B	ZJT	1	PASI-V
		SM 4500-H+B	ZJT	1	PASI-V
12125136002	Decatur Receiving Water	SM 2540C (1997)	DW1	1	PASI-DUL
		EPA 350.1 rev.2 (1993)	DW1	1	PASI-DUL
		SM 4500-CL E (2000 & 2011)	ALB	1	PASI-DUL
		USGS I-3765-85 (1985)	DW1	1	PASI-DUL
		EPA 200.7	AK1	1	PASI-V
		SM 2320B	ZJT	1	PASI-V
		SM 2510B	ZJT	1	PASI-V
		SM 4500-H+B	ZJT	1	PASI-V

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ANALYTICAL RESULTS

Project: GEN19-02-02
Pace Project No.: 12125136

Sample: Decatur Effluent Lab ID: **12125136001** Collected: 05/21/19 07:00 Received: 05/22/19 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C (1997)							
Total Dissolved Solids	**308**	mg/L	20.0	1		05/24/19 12:59		
350.1 Ammonia	Analytical Method: EPA 350.1 rev.2 (1993)							
Nitrogen, Ammonia	**0.38**	mg/L	0.10	1		05/23/19 16:18	7664-41-7	
4500CL E Chlorine, Residual	Analytical Method: SM 4500-CL E (2000 & 2011)							
Chlorine, Total Residual	**<0.020**	mg/L	0.020	1		05/22/19 16:25	7782-50-5	H6
USGS I-3765 TSS	Analytical Method: USGS I-3765-85 (1985)							
Total Suspended Solids	**5.6**	mg/L	1.0	1		05/24/19 15:39		
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Total Hardness	**151**	mg/L	3.3	1	05/24/19 11:00	05/30/19 09:32		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**64.4**	mg/L	10.0	1		05/23/19 15:22		
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	**542**	umhos/cm	10.0	1		05/23/19 15:22		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		05/23/19 15:22		H6

Sample: Decatur Receiving Water Lab ID: **12125136002** Collected: 05/21/19 10:30 Received: 05/22/19 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C (1997)							
Total Dissolved Solids	**80.0**	mg/L	20.0	1		05/24/19 12:59		
350.1 Ammonia	Analytical Method: EPA 350.1 rev.2 (1993)							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		05/23/19 16:20	7664-41-7	
4500CL E Chlorine, Residual	Analytical Method: SM 4500-CL E (2000 & 2011)							
Chlorine, Total Residual	**<0.020**	mg/L	0.020	1		05/22/19 16:30	7782-50-5	H6
USGS I-3765 TSS	Analytical Method: USGS I-3765-85 (1985)							
Total Suspended Solids	**9.6**	mg/L	1.0	1		05/24/19 15:39		
200.7 MET ICP	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Total Hardness	**66.2**	mg/L	3.3	1	05/24/19 11:00	05/30/19 09:20		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**57.2**	mg/L	10.0	1		05/23/19 15:38		

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ANALYTICAL RESULTS

Project: GEN19-02-02
Pace Project No.: 12125136

Sample: Decatur Receiving Water **Lab ID: 12125136002** Collected: 05/21/19 10:30 Received: 05/22/19 10:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	**135**	umhos/cm	10.0	1		05/23/19 15:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	**7.8**	Std. Units	0.10	1		05/23/19 15:38		H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: GEN19-02-02
Pace Project No.: 12125136

QC Batch: 166790 Analysis Method: SM 2540C (1997)
QC Batch Method: SM 2540C (1997) Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 12125136001, 12125136002

METHOD BLANK: 657391 Matrix: Water
Associated Lab Samples: 12125136001, 12125136002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/24/19 12:59	

METHOD BLANK: 657394 Matrix: Water
Associated Lab Samples: 12125136001, 12125136002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	05/24/19 12:59	

LABORATORY CONTROL SAMPLE: 657392

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	250	246	98	80-120	

SAMPLE DUPLICATE: 657393

Parameter	Units	12125136001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	308	312	1	5	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: GEN19-02-02
Pace Project No.: 12125136

QC Batch: 166674 — Analysis Method: EPA 350.1 rev.2 (1993)
QC Batch Method: EPA 350.1 rev.2 (1993) — Analysis Description: 350.1 Ammonia
Associated Lab Samples: 12125136001, 12125136002

METHOD BLANK: 656952 — Matrix: Water
Associated Lab Samples: 12125136001, 12125136002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	05/23/19 15:57	

LABORATORY CONTROL SAMPLE: 656951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	10.2	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 656953 656954

Parameter	Units	12125315001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.040	10	10	10.5	10.5	105	105	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 656955 656956

Parameter	Units	12125256004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.040	10	10	10.4	10.4	104	104	90-110	0	10	

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QUALITY CONTROL DATA

Project: GEN19-02-02
Pace Project No.: 12125136

QC Batch: 166619
Analysis Method: SM 4500-CL E (2000 & 2011)
QC Batch Method: SM 4500-CL E (2000 & 2011)
Analysis Description: 4500CL E Chlorine, Total Residual
Associated Lab Samples: 12125136001, 12125136002

METHOD BLANK: 656720
Matrix: Water
Associated Lab Samples: 12125136001, 12125136002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chlorine, Total Residual	mg/L	<0.020	0.020	05/22/19 16:14	H6

LABORATORY CONTROL SAMPLE: 656719

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total Residual	mg/L	0.1	0.095	95	80-120	H6

SAMPLE DUPLICATE: 656721

Parameter	Units	12125136001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total Residual	mg/L	<0.020	<0.020		20	H6

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QUALITY CONTROL DATA

Project: GEN19-02-02
Pace Project No.: 12125136

QC Batch: 166808
QC Batch Method: USGS I-3765-85 (1985)
Analysis Method: USGS I-3765-85 (1985)
Analysis Description: USGS I-3765 Total Suspended Solids
Associated Lab Samples: 12125136001, 12125136002

METHOD BLANK: 657480 Matrix: Water
Associated Lab Samples: 12125136001, 12125136002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	<1.0	1.0	05/24/19 15:39	

LABORATORY CONTROL SAMPLE: 657481

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	244	237	97	80-120	

SAMPLE DUPLICATE: 657482

Parameter	Units	12125342001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	<1.1	<1.1		10	

SAMPLE DUPLICATE: 657483

Parameter	Units	12125396001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	180	188	4	10	

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QUALITY CONTROL DATA

Project: GEN19-02-02
Pace Project No.: 12125136

QC Batch: 166719 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Associated Lab Samples: 12125136001, 12125136002

METHOD BLANK: 657124 — Matrix: Water
Associated Lab Samples: 12125136001, 12125136002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.0	10.0	05/23/19 14:55	

LABORATORY CONTROL SAMPLE: 657125

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	100	103	103	90-110	

SAMPLE DUPLICATE: 657126

Parameter	Units	12125136001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	64.4	62.6	3	20	

SAMPLE DUPLICATE: 657127

Parameter	Units	12125400001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	489	493	1	20	

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QUALITY CONTROL DATA

Project: GEN19-02-02
Pace Project No.: 12125136

QC Batch: 166720 Analysis Method: SM 2510B
QC Batch Method: SM 2510B Analysis Description: 2510B Specific Conductance
Associated Lab Samples: 12125136001, 12125136002

METHOD BLANK: 657128 Matrix: Water
Associated Lab Samples: 12125136001, 12125136002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	<10.0	10.0	05/23/19 15:09	

LABORATORY CONTROL SAMPLE: 657129

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1413	1430	101	90-110	

SAMPLE DUPLICATE: 657130

Parameter	Units	12125136002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	135	135	0	20	

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QUALITY CONTROL DATA

Project: GEN19-02-02
Pace Project No.: 12125136

QC Batch: 166721 | Analysis Method: SM 4500-H+B
QC Batch Method: SM 4500-H+B | Analysis Description: 4500H+B pH
Associated Lab Samples: 12125136001, 12125136002

LABORATORY CONTROL SAMPLE: 657131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH at 25 Degrees C	Std. Units	7	7.0	100	98-102	H6

SAMPLE DUPLICATE: 657132

Parameter	Units	12125134003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.5	7.5	0	10	H6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: GEN19-02-02
Pace Project No.: 12125136

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-DUL	Pace Analytical Services - Duluth
PASI-V	Pace Analytical Services - Virginia

ANALYTE QUALIFIERS

H6	Analysis initiated outside of the 15 minute EPA required holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GEN19-02-02
Pace Project No.: 12125136

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
12125136001	Decatur Effluent	SM 2540C (1997)	166790		
12125136002	Decatur Receiving Water	SM 2540C (1997)	166790		
12125136001	Decatur Effluent	EPA 350.1 rev.2 (1993)	166674		
12125136002	Decatur Receiving Water	EPA 350.1 rev.2 (1993)	166674		
12125136001	Decatur Effluent	SM 4500-CL E (2000 & 2011)	166619		
12125136002	Decatur Receiving Water	SM 4500-CL E (2000 & 2011)	166619		
12125136001	Decatur Effluent	USGS I-3765-85 (1985)	166808		
12125136002	Decatur Receiving Water	USGS I-3765-85 (1985)	166808		
12125136001	Decatur Effluent	EPA 200.7	166794	EPA 200.7	167022
12125136002	Decatur Receiving Water	EPA 200.7	166794	EPA 200.7	167022
12125136001	Decatur Effluent	SM 2320B	166719		
12125136002	Decatur Receiving Water	SM 2320B	166719		
12125136001	Decatur Effluent	SM 2510B	166720		
12125136002	Decatur Receiving Water	SM 2510B	166720		
12125136001	Decatur Effluent	SM 4500-H+B	166721		
12125136002	Decatur Receiving Water	SM 4500-H+B	166721		

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CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields n

WO# : 12125136

PM: DJT Due Date: 06/01/19

CLIENT: 13_3MDECATUR

:tion A		Section B		Section C	
:quired Client Information:		Required Project Information:		Invoice Information:	
:npany:	3M Decatur	Report To:	Cliff Jacoby		
:ress:	Enersolv Corp	Email To:	cbjacoby2@mmm.com	Email To:	
	2220 Beltline Road, Decatur AL 35601	Phone:	651-733-6899	Address:	
:il To:	dmiller@enersolv.com	Purchase Order No.		Pace Quote Reference:	
:ne:	256-350-0846 Fax.	Client Project ID:		Pace Project Manager:	
:uested Due Date/TAT:		Container Order Number:		Pace Profile #:	

Regulatory Agency
State / Location
AL

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Cubitainer	Analyses Test Y/N	Total Residual Chlorine	Hardness	Alk, pH, Cond	Ammonia	TDS / TSS	Acute CD	Acute FHM						Residual Chlorine (Y/N)	
1	Decatur Effluent	WW	C	5-20-19	0700	5-21-19	1230		6	3	1	1					1		X	X	X	X	X	X	X							1.7°C
2	Decatur Receiving Water	WT	G	~~5-21-19~~	~~1030~~	5-21-19	1030		6	3	1	1					1		X	X	X	X	X	X	X							1.9°C
3	Decatur Effluent (pH Adjusted)																							X	X							
4																																
5																																
6																																
7																																
8																																
9																																
0																																
1																																AP 6-5-19
2																																

Requested Analysis Filtered (Y/N)

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
:pling Information: To be filled out by sampler	To FedEx [signature]	5-21-19	1430	Lynn Kingsbury / Pace	5/22/19	10:35	1.7	Y	Y	Y
:r Water pH							1.9	Y	Y	Y
Effluent pH									N	
:Rate MGD										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: ~~Trent~~ Derrick

SIGNATURE of SAMPLER: [signature] DATE Signed: 5-21-19

3M ~~Ph~~
Ph - 7.2
Temp - 30.6
Time - 1235
3/2 - Flow - 4.1

River
Ph - 7.8
Temp - 24.7
Time - 1030

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A — Required Client Information:

Company:	3M Decatur
Address:	Enersolv Corp
	2220 Beltline Road, Decatur AL 35601
Email To:	dmiller@enersolv.com
Phone:	256-350-0846 Fax:
Requested Due Date/TAT:	

Section B — Required Project Information:

Report To:	Cliff Jacoby
Email To:	cbjacoby2@mmm.com
Phone:	651-733-6890
Purchase Order No.	
Client Project ID:	
Container Order Number:	

Section C — Invoice Information:

Attention:	
Email To:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

Regulatory Agency	
State / Location	AL

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Cubitainer	Analysis Test Y/N	Total Residual Chlorine	Hardness	Alk, pH, Cond	Ammonia	TDS / TSS	Acute CD	Acute FHM	Residual Chlorine (Y/N)
1	Decatur Effluent	WW	C	5-20-19	0700	5-21-19	[illegible]		6	3	1	1					1		X	X	X	X	X	X	X	
2	Decatur Receiving Water	WT	G	~~5-21-19~~	~~1030~~	5-21-19	1030		6	3	1	1					1		X	X	X	X	X	X	X	
3	Decatur Effluent (pH Adjusted)																							X	X	
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Sampling Information: To be filled out by sampler	To FedEx [signature]	5-21-19	1430				
River Water pH							
3M Effluent pH							
Flow Rate MGD							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Trent Derrick

SIGNATURE of SAMPLER: [signature] DATE Signed: 5-21-19

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

3M ~~pH~~
Ph - 7.2
Temp - 30.6
Time - 1235
~~3M~~ - Flow - 4.1

River
Ph - 7.8
Temp - 24.7
Time - 1030

Enersolv Field Calibration Record – pH Measurement

For all field instruments: Calibration/Confirmation Interval - Prior to each use, but not more than daily and after all pH measurements are complete for the day. Calibration Environmental Conditions: Room temperature

Calibrated By: TDerrick **Date:** 5-21-19 **Time:** 0700

pH Meter Calibration – Equipment number: 030

Calibration Verification (ICV)	7.00 pH buffer	10.00pH buffer	
Reagent ID – Pre-calibration	EF81209	EF81210	
Observed pH Buffer Temp., °C	7.0	10.0	
Correction Factor (see chart)	20.3	20.2	
Corrected pH Buffer Temp. °C	-0.1	-0.1	Slope 95 - 102%
Calibration, s.u.	20.2	20.1	

Calibration Verification (ICV)	7.00 pH buffer Acc. Range 7.0 +/- 0.1	10.00pH buffer Acc. Range 10.0+/- 0.1	
Reagent ID – After Calibration	E581601	E581603	
Calibration Verification (ICV), s.u.	7.0	10.0	

pH Meter Post Calibration Check **Date:** 5-21-19 **Time:** 1440

	7.00 pH buffer Acc. Range 7.00+/- 0.2	10.0 pH buffer Acc. Range 10.00+/-0.2
Reagent ID	E581601	E581603
Post Calibration pH value	7.1	10.1
Observed Buffer Temp., °C	20.3	20.3
Correction Factor	-0.1	-0.1
Final Buffer Temp., °C	20.2	20.2

If any client sample pH measurement was less than 5.0 s.u., perform check on 4.0 pH buffer

4.0 Buffer Cal., if required Date/time: ______ ☒ NA

4.00 pH buffer, Acc. Range 4.00+/-0.1		
pH 4.00 buffer Reagent ID:		
pH 4.00 buffer value:		
Observed pH Buffer Temp., °C	Correction Factor	Final pH Buffer Temp., °C

WO#: 12125136

PM: DJT Due Date: 06/01/19

CLIENT: 13_3MDECATUR

Note: If equipment calibration fails to mee[t] ... [ta]ken out of service and tagged for repair.

WO#: 12125136

PM: DJT Due Date: 08/01/19

CLIENT: 13_3MDECATUR

Page 1 of 2

ORIGIN ID:MDRA (256) 350-0846
TRENT DERRICK
ENERSOLV
2220 BELTLINE ROAD SW

DECATUR, AL 35601
UNITED STATES US

SHIP DATE: 21MAY19
ACTWGT: 55.00 LB
CAD: 4462872/INET4100

BILL SENDER

TO DAN TOMS
PACE ANALYTICAL SERVICES, INC.
4730 ONEOTA ST

DULUTH MN 55807
(218) 727-6380 REF
INV
PO DEPT

FedEx Express

E

WED - 22 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7752 7579 3431

XH DLHA

55807
MN-US MSP

Sample Condition Upon Receipt

Client Name: 3m Decatur

Project #:

WO# : 12125136

PM: DJT **Due Date: 06/01/19**

CLIENT: 13_3MDECATUR

Courier: [x] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace [ ] Other:

Tracking Number:

Custody Seal on Cooler/Box Present? [ ] Yes [x] No **Seals Intact?** [ ] Yes [x] No

Optional: Proj. Due Date: Proj. Name:

Packing Material: [ ] Bubble Wrap [ ] Bubble Bags [x] None [ ] Other: **Temp Blank?** [ ] Yes [x] No

Thermometer Used: Therm ID: 122639816 [ ] 170481599 **Type of Ice:** [x] Wet [ ] Blue [ ] None [ ] Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.7, 1.9 **Cooler Temp Corrected °C:** 1.7, 1.9 **Biological Tissue Frozen?** [ ] Yes [ ] No [x] NA

Temp should be above freezing to 6 °C Correction Factor: 0.0, 0.0 **Date and Initials of Person Examining Contents:** 5/22/19

If temperature is ≤0 °C, is there evidence of ice formation? [ ] Yes [ ] No [x] NA

	Yes	No	N/A	Comments:
Chain of Custody Present?	[x]	[ ]	[ ]	1.
Chain of Custody Filled Out?	[x]	[ ]	[ ]	2.
Chain of Custody Relinquished?	[x]	[ ]	[ ]	3.
Sampler Name and Signature on COC?	[x]	[ ]	[ ]	4.
Samples Arrived within Hold Time?	[x]	[ ]	[ ]	5. If Fecal: [ ] <8 hours [ ] >8, <24 hours [ ] >24 hours
Short Hold Time Analysis (<72 hr)?	[x]	[ ]	[ ]	6. pH, ResCl
Rush Turn Around Time Requested?	[ ]	[x]	[ ]	7.
Sufficient Volume?	[ ]	[x] *	[ ]	8. * Low volume in cubitainer 2 L 5-23-19
Correct Containers Used?	[x]	[ ]	[ ]	9.
-Pace Containers Used?	[x]	[ ]	[ ]	
Containers Intact?	[x]	[ ]	[ ]	10.
Filtered Volume Received for Dissolved Tests?	[ ]	[ ]	[x]	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT 5/22/19	~~[x]~~	[x]	[ ]	12. Sample bottles were labeled, but no dates or times were recorded for collection.
All containers needing acid/base preservation properly preserved?	[x]	[ ]	[ ]	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	[ ]	[ ]	[x]	14.
Headspace in VOA Vials (>6mm)?	[ ]	[ ]	[x]	15.
Trip Blank Present?	[ ]	[ ]	[x]	16.
Trip Blank Custody Seals Present?	[ ]	[ ]	[x]	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? [ ] Yes [ ] No

Person Contacted: Date/Time: AP 5-22-19

Comments/Resolution: Logged in samples with collected End Date/time from ~~on~~ COC. Decatur Eff and Decatur Eff (pH Adjusted) - logged in with the same collected End Date/time - AP 5-22-19
Rec with COC has Acute CD + Acute FHM requested. We do test for these but do not enter acodes. AP 5-23-19

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: AP for DJT **Date:** 5-23-19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 20Mar2019 Page ~~1 of 1~~ 2 of 3 AP 5-23-19
	Document No.: F-DUL-C-001-rev.06	Issuing Authority: Pace Duluth Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Project #: 1212513G

AP 5-23-19

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other: ______

Tracking Number: ______

Custody Seal on Cooler/Box Present? ☐ Yes ☐ No **Seals Intact?** ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: ______

Temp Blank? ☐ Yes ☐ No

Thermometer Used: ☐ 013397577710 ☐ 170481599 **Type of Ice:** ☐ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: ______ **Cooler Temp Corrected °C:** ______

Biological Tissue Frozen? ☐ Yes ☐ No ☐ NA

Temp should be above freezing to 6 °C Correction Factor: ______

Date and Initials of Person Examining Contents: ______

If temperature is ≤0 °C, is there evidence of ice formation? ☐ Yes ☐ No ☐ NA

				Comments:
Chain of Custody Present?	☐ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☐ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☐ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☐ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☐ No	☐ N/A	7.
Sufficient Volume?	☐ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☐ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☐ No	☐ N/A	
Containers Intact?	☐ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☐ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix: ______				
All containers needing acid/base preservation properly preserved?	☐ Yes	☐ No	☐ N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☐ N/A	14.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☐ N/A	15.
Trip Blank Present?	☐ Yes	☐ No	☐ N/A	16.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased): ______				

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: ______ Date/Time: ______

Comments/Resolution: See attached e-mails - Dan Toms emailed Darrin Miller asking - when sample was shipped was a custody seal intact on cooler? Sample volume in cubitainer was very low, barely had enough sample to initiate test. No dates/times on sample containers. Reminder about plastic cooler bag. Also, asked about COC Start/End times listed. Darrin replied - he sent a new COC noting the corrected composite times. - AP 5-23-19

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: ______ **Date:** ______

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Sample Condition Upon Receipt

Client Name:

Project #: 1212S136

AP 5-23-19

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:________

Tracking Number: ____________

Custody Seal on Cooler/Box Present? ☐ Yes ☐ No **Seals Intact?** ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other:________ **Temp Blank?** ☐ Yes ☐ No

Thermometer Used: ☐ 053827... ☐ 170481599 **Type of Ice:** ☐ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: ________ **Cooler Temp Corrected °C:** ________ **Biological Tissue Frozen?** ☐ Yes ☐ No ☐ NA

Temp should be above freezing to 6 °C Correction Factor:________ **Date and Initials of Person Examining Contents:** ________

If temperature is ≤0 °C, is there evidence of ice formation? ☐ Yes ☐ No ☐ NA

				Comments:
Chain of Custody Present?	☐ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☐ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☐ Yes	☐ No	☐ N/A	3.
Sampler Name and Signature on COC?	☐ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☐ Yes	☐ No	☐ N/A	5. If Fecal: ☐ <8 hours ☐ >8, <24 hours ☐ >24 hours
Short Hold Time Analysis (<72 hr)?	☐ Yes	☐ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☐ No	☐ N/A	7.
Sufficient Volume?	☐ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☐ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☐ No	☐ N/A	
Containers Intact?	☐ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☐ N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☐ Yes	☐ No	☐ N/A	12.
-Includes Date/Time/ID/Analysis Matrix:____				
All containers needing acid/base preservation properly preserved?	☐ Yes	☐ No	☐ N/A	13. Note samples needing adjustment:
Headspace in Methyl Mercury Container	☐ Yes	☐ No	☐ N/A	14.
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☐ N/A	15.
Trip Blank Present?	☐ Yes	☐ No	☐ N/A	16.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☐ N/A	
Pace Trip Blank Lot # (if purchased):____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: ____________ Date/Time: ____________

Comments/Resolution: Darrin also replied - There was not a Custody Seal placed on cooler AP 5-23-19 prior to shipment. He instructed technician to make sure all containers ~~all containers~~ are to be full + the containers were placed in a bag and iced prior to shipment AP 5-23-19

FECAL WAIVER ON FILE Y N TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: ____________ **Date:** ____________

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

Annette Panfil - RE: Decatur Sampling Event

From: Darrin Miller <dmiller@enersolv.com>
To: Dan Toms <Dan.Toms@pacelabs.com>
Date: 5/23/2019 10:26 AM
Subject: RE: Decatur Sampling Event
Cc: Annette Panfil <Annette.Panfil@pacelabs.com>
Attachments: SKM_C75919052308480.pdf

Dan,

Please see attached C.O.C. noting the corrected composite times.

- There was not a custody seal placed on the cooler prior to shipment
- I instructed my Technician to make sure all containers are to be full
- The containers were placed in a bag and iced prior to shipment

I apologize for the confusion,

Thanks,
Darrin Miller
Enersolv

From: Dan Toms [Dan.Toms@pacelabs.com]
Sent: Thursday, May 23, 2019 8:44 AM
To: Darrin Miller
Cc: Annette Panfil
Subject: Decatur Sampling Event

Hello Darrin,

We received the Decatur sample at the lab yesterday and the sample was received within the correct temperature range.

When the sample was shipped was there a custody seal intact on the cooler?

The sample volume in the cubitainer was very low, only about half full. We had barely enough sample to initiate the test.

There were no dates and times on the sample containers. This data should be filled out and match the COC. We did receive the Field Calibration Record. Thank you.

Remember to pack the samples in the large plastic cooler bag to ensure that water doesn't escape from the cooler during shipment. If there is some leakage from the cooler the shipping company will not deliver the shipment. This may have been done yesterday, but is a reminder.

The COC Start and End times list 07:00 until 12:30. Is that correct? If so, why sample longer than the 24 hours?

Best regards,

Dan Toms
Bioassay Supervisor
Pace Analytical Services, LLC
4730 Oneota Street
Duluth, MN 55807
218-336-2120 | 218-727-6380
www.pacelabs.com

APPENDIX D

Reference Toxicity Testing Data Packs

Pace Analytical
Precision of NaCl Acute Reference Toxicant Testing
for *Ceriodaphnia dubia*

Date	LC_{50} (g/L)	Mean (g/L)	SD	CV (%)	Lower Limit (g/L)	Upper Limit (g/L)
01/31/18	2.20	--	--	--	--	--
02/06/18	1.83	2.02	--	--	--	--
02/21/18	1.77	1.93	0.23	12.0	1.47	2.40
03/06/18	2.50	2.08	0.34	16.4	1.39	2.76
03/20/18	2.10	2.08	0.30	14.2	1.49	2.67
04/18/18	1.67	2.01	0.31	15.6	1.39	2.64
04/25/18	1.70	1.97	0.31	15.7	1.35	2.59
05/01/18	2.33	2.01	0.31	15.6	1.39	2.64
06/12/18	2.34	2.05	0.31	15.3	1.42	2.67
07/18/18	1.83	2.03	0.30	15.0	1.42	2.63
08/08/18	1.89	2.01	0.29	14.4	1.43	2.60
11/28/18	1.68	1.99	0.29	14.8	1.40	2.57
03/20/19	1.83	1.97	0.28	14.4	1.41	2.54
04/17/19	1.74	1.96	0.28	14.3	1.40	2.52
05/09/19	1.77	1.95	0.27	14.1	1.40	2.49
05/22/19	1.71	1.93	0.27	14.1	1.39	2.47

Organism Source – ABS

C:\STATIS~1\SPEARM~1.EXE

WOULD YOU LIKE THE AUTOMATIC TRIM CALCULATION<Y/N>?
Y

DATE: 05/22/19 TEST NUMBER: 2 DURATION: 48 H
TOXICANT : NaCl
SPECIES: C.dubia

RAW DATA:

Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
.63	20	0
1.25	20	2
2.50	20	19
5.00	20	20
10.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 1.71
95% LOWER CONFIDENCE: 1.52
95% UPPER CONFIDENCE: 1.92

WOULD YOU LIKE TO HAVE A COPY SENT TO THE PRINTER<Y/N>?

Pace Analytical Services, LLC

Client: Pace RTT

Pace Project #: N/A

Test: *Ceriodaphnia dubia* Acute Reference Toxicant Test

Test Initiation Date: May 22, 2019

Test Termination Date: May 24, 2019

Pace Analytical
Client Color Code: Yellow

ENVIRONMENTAL SAMPLE TEST INFORMATION

Date: May 22, 2019
Client: Not Applicable
Pace Project #: Not Applicable
Dilution Water: MHRW
Test Chamber: 1 oz plastic
Food: None
Required Testing Temperature: 24-26 °C
C. dubia Bath # 5
Test Organism(s)/Age: *Ceriodaphnia dubia*/<24 hours old / Pace Analytical Culture
Comments:

Pace Analytical
Client Color Code: Yellow

TOXICITY TEST RENEWAL FORM

CLIENT: Pace RTT

PACE PROJECT #: Not Applicable

TEST: Acute Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM: *C. dubia*

TEST TERMINATION DATE: May 24, 2019

TEST DAY	0 Test Initiation	1	2
DATE	5/22/19	5/23/19	5/24/19
Time of Renewal/Reading (±1 hour of initiation) Init	1516	1516	1545
Time of Feeding / Food IDs/ Init	180350 180095 0955 CJA	Not Applicable	Not Applicable
DILUTION WATER	MHRW 19-027	N/A	N/A
INITIALS	APR	APR	ALB

Pace Analytical
Client Color Code: Yellow

INITIAL CHEMISTRIES

CLIENT: Pace RTT

Pace Project #: Not Applicable

TEST: Acute Reference Test

TEST INITIATION DATE: May 22, 2019

ORGANISM(S): *C. dubia*

TEST TERMINATION DATE: May 24, 2019

	Date/Time/Initials		
	1310 [illegible] 5/22/19		
CONCENTRATION: Secondary Control – Treated Tap Water			
pH (su)	7.26		
DO (mg/L)	7.3		
Temp (°C)	24.3		
Cond (umhos/cm)	120		
CONCENTRATION: Primary Control - MHRW			
pH (su)	7.91		
DO (mg/L)	8.2		
Temp (°C)	24.3		
Cond (umhos/cm)	300		
CONCENTRATION: 0.625 g/L NaCl			
pH (su)	7.75		
DO (mg/L)	8.3		
Temp (°C)	25.0		
Cond (umhos/cm)	1547		
CONCENTRATION: 1.25 g/L NaCl			
pH (su)	7.87		
DO (mg/L)	8.3		
Temp (°C)	24.3		
Cond (umhos/cm)	2330		
CONCENTRATION: 2.5 g/L NaCl			
pH (su)	7.87		
DO (mg/L)	8.3		
Temp (°C)	24.4		
Cond (umhos/cm)	5120		
CONCENTRATION: 5 g/ L NaCl			
pH (su)	7.82		
DO (mg/L)	8.3		
Temp (°C)	24.4		
Cond (umhos/cm)	9570		
CONCENTRATION: 10 g/L NaCl			
pH (su)	7.73		
DO (mg/L)	8.4		
Temp (°C)	24.4		
Cond (umhos/cm)	18590		

Pace Analytical
Client Color Code: Yellow

FINAL CHEMISTRIES

CLIENT: Not Applicable

Pace Project #: Not Applicable

TEST: Acute Reference Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM: *C. dubia*

TEST TERMINATION DATE: May 24, 2019

Date/Time/Initials					
	5/23/19 APL 1505	5/24/19 APL 1700			
CONCENTRATION: Secondary Control – Treated Tap Water					
Replicate	**From Monitoring Chamber**	A	B	C	D
pH (su)	7.97	7.82	7.90	7.78	7.84
DO (mg/L)	8.1	8.1	8.3	8.2	8.2
Temp (°C)	24.4	25.2	25.2	25.2	25.1
CONCENTRATION: Primary Control - MHRW					
Replicate	**From Monitoring Chamber**	A	B	C	D
pH (su)	8.07	8.03	8.02	7.96	8.00
DO (mg/L)	8.2	8.2	8.2	8.2	8.2
Temp (°C)	24.5	25.2	25.2	25.1	25.1
CONCENTRATION: 0.625 g/L NaCL					
Replicate	**From Monitoring Chamber**	A	B	C	D
pH (su)	8.06	8.04	7.99	7.98	7.99
DO (mg/L)	8.2	8.2	8.2	8.2	8.2
Temp (°C)	24.5	25.0	25.0	25.0	24.9
CONCENTRATION: 1.25 g/L NaCl					
Replicate	**From Monitoring Chamber**	A	B	C	D
pH (su)	8.06	8.07	8.00	7.97	7.99
DO (mg/L)	8.2	8.2	8.2	8.2	8.2
Temp (°C)	24.3	25.0	24.9	24.9	24.8
CONCENTRATION: 2.5 g/L NaCl					
Replicate	**From Monitoring Chamber**	A	B	C	D
pH (su)	8.03	8.03	8.03	8.01	8.01
DO (mg/L)	8.2	8.2	8.2	8.2	8.2
Temp (°C)	24.4	24.9	25.0	25.0	24.9
CONCENTRATION: 5 g/L NaCl					
Replicate	**From Monitoring Chamber**	A	B	C	D
pH (su)	7.98				
DO (mg/L)	8.2	Dead			ALB 5/24/19
Temp (°C)	24.5				
CONCENTRATION: 10 g/L NaCl					
Replicate	**From Monitoring Chamber**	A	B	C	D
pH (su)	7.93				
DO (mg/L)	8.2	Dead			ALB 5/24/19
Temp (°C)	24.5				

Pace Analytical
Client Color Code: Yellow

ACUTE TOXICITY DATA LOG

Client: Pace RTT	Species: *Ceriodaphnia dubia*
Project #: Not Applicable	Age: <24 Hour
Test: Acute Reference Test	No. Animals/No. Reps: 5/4
Template ID: **C**	Sources of Animals: Pace Analytical
Test Initiation Date: May 22, 2019	Dilution Water/Control: MHRW/MHRW
Investigator: Toms	Test Volume: 20 mL
Test Duration: 48 hour	Required Testing Test Temp: 24-26 °C
Renewal: **None**	

EFFLUENT

Survival Readings (Randomized):

(# alive out of # exposed from above unless shown otherwise)

ROW	24 Hour Column ID A	B	C	D	48 Hour Column ID A	B	C	D
7	(4) 5	(5) 4	(7) 0	(1) 5	(4) 4	(5) 0	(7) 0	(1) 5
6	(7) 0	(2) 5	(5) 5	(2) 5	(7) 0	(2) 5	(5) 0	(2) 5
5	(3) ~~4~~ 5 APR 5/23/19	(7) 0	(4) 4	(5) 5	(3) 5	(7) 0	(4) 4	(5) 0
4	(5) 5	(6) 0	(1) 5	(6) 0	(5) 1	(6) 0	(1) 5	(6) 0
3	(2) 5	(1) 5	(2) 5	(3) 5	(2) 5	(1) 4	(2) 5	(3) 5
2	(1) 5	(3) 5	(3) 5	(4) 5	(1) 5	(3) 5	(3) 5	(4) 5
1	(6) 0	(4) 5	(6) 0	(7) 0	(6) 0	(4) 5	(6) 0	(7) 0
Dated Initials	APR 5/23/19				ALB 5/24/19			

Comments:

Pace Analytical
Client Color Code: Yellow

ACUTE TOXICITY DATA LOG

Client: Not Applicable	Species: *Ceriodaphnia dubia*
Project #: Not Applicable	Age: <24 Hour
Test: Acute Reference Test	No. Animals/No. Reps: 5/4
Test Initiation Date: May 22, 2019	Sources of Animals: Pace Analytical
Investigator: Toms	Dilution Water/Control: MHRW/MHRW
Test Duration: 48 hour	Test Volume: 20 mL
Renewal: **None**	Required Testing Temp: 24-26 °C
	Minimum Control Survival ≥ 90%: (Yes / No)

Concentration	Survival Readings: (# alive out of # exposed from above unless shown otherwise)							
	24 Hour Replicate				48 Hour Replicate			
	A	B	C	D	A	B	C	D
Treated Tap Water (1)	5	5	5	5	5	4	5	5
MHRW(2)	5	5	5	5	5	5	5	5
0.625 g/L (3)	APR 6/5/19 5 ~~4~~	5	5	5	5	5	5	5
1.25 g/L (4)	5	5	4	5	4	5	4	5
2.5 g/L (5)	5	4	5	5	1	0	0	0
5 g/L (6)	0	0	0	0	0	0	0	0
10 g/L (7)	0	0	0	0	0	0	0	0

Deciphered By: APR 6/5/19

Comments:

Pace Analytical
Precision of NaCl Acute Reference Toxicant Testing for *Pimephales promelas* (Fathead Minnows) At 25° C for 48 hours

Date	LC_{50} (g/L)	Mean (g/L)	SD	CV (%)	Lower Limit (g/L)	Upper Limit (g/L)
04/25/18	7.07	--	--	--	--	--
06/26/18	7.07	7.07	--	--	--	--
07/17/18	7.07	7.07	0.00	0.0	7.07	7.07
07/25/18	7.32	7.13	0.13	1.8	6.88	7.38
08/08/18	6.95	7.10	0.14	1.9	6.82	7.37
09/25/19	7.07	7.09	0.12	1.7	6.85	7.34
11/28/18	6.95	7.07	0.12	1.7	6.82	7.32
1/25/19	7.07	7.07	0.11	1.6	6.84	7.30
03/20/19	7.32	7.10	0.14	1.9	6.83	7.37
04/17/19	7.07	7.10	0.13	1.8	6.84	7.35
05/22/19	7.07	7.09	0.12	1.7	6.85	7.34

Organism Source - Aquatox

C:\STATIS~1\SPEARM~1.EXE

WOULD YOU LIKE THE AUTOMATIC TRIM CALCULATION(Y/N)?
y

DATE: 05/22/19 TEST NUMBER: 1 DURATION: 48 H
TOXICANT : NaCl
SPECIES: Fathead Minnow

RAW DATA:

Concentration (g/L)	Number Exposed	Mortalities
.00	40	0
1.25	40	0
2.50	40	0
5.00	40	0
10.00	40	40
20.00	40	40

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 7.07
95% CONFIDENCE LIMITS
ARE NOT RELIABLE.

WOULD YOU LIKE TO HAVE A COPY SENT TO THE PRINTER(Y/N)?

Pace Analytical Services, LLC

Client: Pace RTT

Pace Project #: N/A

Test: FHM Acute Reference Toxicant Test

Test Initiation Date: May 22, 2019

Test Termination Date: May 24, 2019

[redacted]

ENVIRONMENTAL SAMPLE TEST INFORMATION

Date: May 22, 2019
Client: Pace RTT
Pace Project #: Not Applicable
Dilution Water: MHRW
Test Chamber: 250 mL plastic
Food: None
Required Testing Temperature: 24-26
Fathead Minnow Bath # 5
Test Organism(s)/Age/Source/: Fathead Minnow / 8 days / Aquatox
Comments:
Page 4 was re-printed due to formatting error
found when taking chemistry readings. —[illegible] 5/22/19

Pace Analytical
Testing Color Code: Brown
[redacted]

TOXICITY TEST RENEWAL FORM

CLIENT: Pace RTT

PACE PROJECT #: Not Applicable

TEST: Acute Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM: Fathead Minnow

TEST TERMINATION DATE: May 24, 2019

TEST DAY	0 Test Initiation	1	2
DATE	5/22/19	5/23/19	5/24/19
Time of Renewal/Reading (±1 hour of initiation)	1527	1455	1545
TIME OF FEEDING	1215	Not Applicable	N/A
DILUTION WATER	MHRW 19-027	Not Applicable	MHRW N/A
INITIALS	[illegible]	CJA	ALB

Pace Analytical
Testing Color Code: Brown
[redacted]

INITIAL CHEMISTRIES

CLIENT: Pace RTT Pace Project #: Not Applicable

TEST: Acute Reference Test TEST INITIATION DATE: May 22, 2019

ORGANISM(S): Fathead Minnow TEST TERMINATION DATE: May 24, 2019

	Date/Time/Initials			
	5/22/19 [illegible] 1310	Not Applicable	Not Applicable	Not Applicable
CONCENTRATION: Secondary Control - Treated Tap Water				
pH (su)	7.26	AK 6/5/19		
DO (mg/L)	7.3			
Temp (°C)	24.3			
Cond (umhos/cm)	120			
CONCENTRATION: Primary Control - MHRW				
pH (su)	7.91			
DO (mg/L)	8.2			
Temp (°C)	24.3			
Cond (umhos/cm)	300			
CONCENTRATION: 1.25 g/L NaCl				
pH (su)	7.87			
DO (mg/L)	8.3			
Temp (°C)	24.3			
Cond (umhos/cm)	2330			
CONCENTRATION: 2.5 g/L NaCl				
pH (su)	7.87			
DO (mg/L)	8.3			
Temp (°C)	24.4			
Cond (umhos/cm)	5120			
CONCENTRATION: 5 g/L NaCl				
pH (su)	7.82			
DO (mg/L)	8.3			
Temp (°C)	24.4			
Cond (umhos/cm)	9570			
CONCENTRATION: 10 g/L NaCl				
pH (su)	7.73			
DO (mg/L)	8.4			
Temp (°C)	24.4			
Cond (umhos/cm)	18590			
CONCENTRATION: 20 g/L NaCl				
pH (su)	7.58			
DO (mg/L)	8.4			
Temp (°C)	24.4			
Cond (umhos/cm)	35000			

Pace Analytical
Testing Color Code: Brown
[redacted]

FINAL CHEMISTRIES

CLIENT: Pace RTT

Pace Project #: Not Applicable

TEST: Acute Reference Toxicity

TEST INITIATION DATE: May 22, 2019

ORGANISM: Fathead Minnow

TEST TERMINATION DATE: May 24, 2019

	Date/Time/Initials									
	5/23/19 AK 1006				5/24/19 ALB 1416				Not Applicable	Not Applicable
CONCENTRATION: Secondary Control - Treated Tap Water										
Replicate	A	B	C	D	A	B	C	D	A	A
pH (su)	7.75	7.81	7.81	7.81	7.93	7.94	7.94	7.97		
DO (mg/L)	7.8	7.7	7.7	7.7	7.8	7.8	7.8	7.8		
Temp (°C)	25.1	25.1	25.0	25.0	25.7	25.7	25.7	25.5		
CONCENTRATION: Primary Control - MHRW										
Replicate	A	B	C	D	A	B	C	D	A	A
pH (su)	7.86	7.87	7.93	7.94	8.01	7.98	8.06	8.04		
DO (mg/L)	7.8	7.7	7.8	7.8	7.7	7.7	7.8	7.8		
Temp (°C)	25.1	25.1	24.9	24.7	25.7	25.7	25.3	25.2		
CONCENTRATION: 1.25 g/L NaCl										
Replicate	A	B	C	D	A	B	C	D	A	A
pH (su)	7.87	7.92	7.89	7.98	8.00	7.99	7.98	8.03		
DO (mg/L)	7.8	7.8	7.6	7.9	7.8	7.8	7.8	7.8		
Temp (°C)	25.1	25.1	25.0	24.7	25.7	25.7	25.6	25.1		
CONCENTRATION: 2.5 g/L NaCl										
Replicate	A	B	C	D	A	B	C	D	A	A
pH (su)	7.85	7.81	7.94	7.94	7.96	7.96	8.00	8.02		
DO (mg/L)	7.7	7.8	7.8	7.9	7.7	7.8	7.8	7.8		
Temp (°C)	25.2	25.0	24.9	24.7	25.6	25.5	25.4	25.1		
CONCENTRATION: 5 g/L NaCl										
Replicate	A	B	C	D	A	B	C	D	A	A
pH (su)	7.86	7.91	7.90	7.89	7.92	7.97	7.97	7.95		
DO (mg/L)	7.8	7.9	8.0	7.9	7.8	7.8	7.8	7.8		
Temp (°C)	25.0	24.9	24.8	24.9	25.6	25.4	25.3	25.4		
CONCENTRATION: 10 g/L NaCl										
Replicate	A	B	C	D	A	B	C	D	A	A
pH (su)	7.85	7.83	7.78	7.81	7.88	7.86		Dead		
DO (mg/L)	7.8	7.7	7.6	7.6	7.8	7.6	ALB 5/24/19			
Temp (°C)	25.1	24.9	25.0	25.0	25.3	25.5				
CONCENTRATION: 20 g/L NaCl										
Replicate	A	B	C	D	A	B	C	D	A	A
pH (su)	7.58	7.54	7.58	7.58						
DO (mg/L)	6.9	6.9	6.8	6.9	ALB	Dead 5/24/19				
Temp (°C)	24.6	24.9	24.9	24.7						

ACUTE TOXICITY DATA LOG

Client: Pace RTT	Species: Fathead Minnow
Project #: Not Applicable	Age: 8 day
Test: Acute Reference Test	No. Animals/No. Reps: 10/4
Template ID: B	Sources of Animals: Aquatox
Test Initiation Date: May 22, 2019	Dilution Water/Control: MHRW/TT
Investigator: Toms	Test Volume: 200 mL
Test Duration: 96 hour	Required Testing Temperature: 24-26 °C
Renewal: **Other @ 48 H**	Minimum Control Survival ≥ 90%: (Yes / No)

Concentration	Survival Readings: (# alive out of # exposed from above unless shown otherwise)									
	24 Hour Replicate				48 Hour Replicate				72 Hour Replicate A B C D	96 Hour Replicate A B C D
	A	B	C	D	A	B	C	D		
Treated Tap Water	10	10	10	10	10	10	10	10	Not Applicable	Not Applicable
MHRW	10	10	10	10	10	10	10	10	Not Applicable	Not Applicable
1.25 g/L	10	10	10	10	10	10	10	10	Not Applicable	Not Applicable
2.5 g/L	10	10	10	10	10	10	10	10	Not Applicable	Not Applicable
5 g/L	10	10	10	10	10	10	10	10	Not Applicable	Not Applicable
10 g/L	1	1	0	0	0	0	0	0	Not Applicable	Not Applicable
20 g/L	0	0	0	0	0	0	0	0	Not Applicable	Not Applicable
	Dated Initials 5/23/19 CJA 1455				Dated Initials 5/24/19 1531 ALB				Dated Initials	Dated Initials

Comments:

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

JUN 13 2019

UNITED PARCEL SERVICE

Mr. James C. Banks, PhD
Environmental, Health and Safety Manager
Film and Materials Resource Division
3M Company
1400 State Docks Road
Decatur, Alabama 35601

Re: Notice of Inspection
Toxic Substances Control Act

Dear Mr. Banks:

This letter serves to confirm the June 11, 2019, telephone conversation between you and Mr. Verne George with the U.S. Environmental Protection Agency, Region 4. The details regarding the EPA's desire to conduct an inspection at 3M Company (the Facility) located in Decatur, Alabama were discussed during the call. As indicated, the inspection will begin at 9:00 a.m. on July 16, 2019, through July 18, 2019. Where necessary and agreeable to both parties, the EPA representative will take an offsite lunch break and resume inspection activities within a reasonable time (30 to 45 minutes).

The inspection will be conducted pursuant to Section 11 of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2610, to determine compliance with TSCA Sections 4, 5, 8, 12 and 13. As applicable, among the specific issues to be addressed are the chemical substances or mixtures manufactured, imported, exported, processed, stored, used, or disposed of in relation to or associated with your establishments, facilities or other premises. The inspector will (1) review files, data and correspondence that are either required to be maintained by TSCA or applicable to the chemical substances or mixtures within your facilities and (2) interview personnel if necessary.

To facilitate the inspection, the EPA requests that you have available for the inspector to review at the time of the inspection the information identified in the enclosed document, "Information to be Prepared by the Facility for Review During the TSCA Inspection." The EPA prefers for this information to be presented electronically on a USB flash drive with the information requested in Sections A – H as separate Adobe portable file (pdf) files, searchable using optical character recognition (OCR), and the lists 1 – 4 identified in Sections I – L as separate Microsoft Excel Workbook files. You may print any document for clarity. Please do not mail, fax, email or otherwise send this information to the EPA unless specifically requested by the inspector.

TSCA Confidential Business Information (CBI) Claims

Under Section 14(a) of TSCA, the Facility may claim information submitted to the EPA under TSCA as CBI. TSCA CBI claims must be asserted and substantiated concurrently with the submission of the information, except for those types of information exempt under TSCA Section 14(c)(2). There are several procedural requirements that must be followed when asserting CBI claims in TSCA submissions. Guidance for what to include in TSCA CBI substantiations can be found at: https://www.epa.gov/tsca-cbi/what-include-cbi-substantiations#informationexempt.

During the inspection and potentially after the inspection the inspector will most likely request that the Facility send certain information to the EPA. If requested, you must follow the directions below in submitting any such information.

If during the inspection or after the inspection some or all of the information requested by the inspector to be sent to the EPA is claimed by the Facility to be TSCA CBI:

- Mail the applicable information to **Mr. Gopal Timsina** at the letterhead address. The EPA recommends that the information be mailed in a manner that can be tracked by the Facility.
- To ensure confidentiality, the information should be placed in an inner envelop labeled "Confidential – To Be Opened by Addressee Only." The inner envelop should be placed in an outer envelope for mailing.
- If the Facility is unable to provide the identity of a chemical substance or mixture because of a domestic and/or foreign supplier or customer CBI claim, please be prepared to identify those products at the time of the inspection.
- You must follow the above directions in submitting information claimed to be TSCA CBI to ensure that the security and confidentiality of the information is maintained.

If during the inspection or after the inspection none of the information requested by the inspector to be sent to the EPA is claimed to be TSCA CBI:

- Send the applicable information to **Mr. Verne George** at the letterhead address.

The EPA developed an information sheet entitled "U.S. EPA Small Business Resources" to help small businesses understand federal and state environmental laws and rights under the Small Business Regulatory Enforcement Fairness Act. The information sheet can be found on the internet at: www2.epa.gov/sites/production/files/2017-06/documents/smallbusinessinfo.pdf. If you have any questions, please contact Mr. Verne George of the EPA Region 4 staff at (404) 562-8988 or via email at George.verne@epa.gov.

Sincerely,

Kimberly L. Bingham
Chief
Chemical Safety Section

Enclosure

Information to be Prepared by the Facility for Review During the TSCA Inspection

Facility Name: 3M Company
Location (City, State): Decatur, Alabama

A. General Company Information

1. Brief company history including ownership and nature of business.
2. Corporate structure including domestic and foreign parent companies.
3. Facilities owned by the company located in the USA including subsidiaries (name and location).
4. Number of employees at the Facility and corporate level.
5. The 2015 gross annual sales range for the Facility and corporate level (less than $4 million, $4 million to $40 million or greater than $40 million).

B. Process Flow Diagrams

1. For each chemical that is manufactured or processed, make available a flow diagram (drawing/sketch) listing each raw material input and the resulting products (by Chemical Abstracts Service Registry Number (CASRN)) for each step. The flow diagrams should also include, if applicable, intermediates, byproducts, or catalysts.
2. For waste streams, intermediates or byproducts generated during the production processes, indicate the steps associated with the disposition of the on-site/off-site uses as it relates to marketing, recycling, or disposal.

C. TSCA Section 4 Records (Last three years)

1. For Chemical substances that were manufactured or imported and subject to a TSCA Section 4 Test rule, make available the Letters of intent to conduct testing or Requests for exemption from testing.
2. If applicable, provide proof of data submission.

D. TSCA Section 5(a)(1) and (2) Records (Last three years)

1. Bonafide Intents submitted.
2. Premanufacture Notices (PMNs), Low Volume Exemptions, Test Marketing Exemptions and Polymer Exemptions along with any EPA responses.
3. Significant New Use Rule Notices along with any EPA responses.
4. Notices of Commencements and associated production records.

E. TSCA Section 5(e) and (f) Records (Last three years)

1. TSCA Section 5(e)/(f) Consent Orders along with the applicable records.

F. TSCA Section 8(a) and 8(b) Records (Last three years)

1. Preliminary Assessment Information Rule (PAIR) information.
2. The 2016 Chemical Data Report (CDR) along with the applicable production records.

G. TSCA Section 8(c), (d), and (e) Records (Last five years)

1. Documentation of allegations of significant adverse reactions to health or the environment alleged to have been caused by the chemical substances/mixtures that were manufactured, imported, processed or distributed by the Facility.

2. A list of any and all TSCA Section 8(d) health and safety studies submitted to EPA and copies of any and all health and safety information known by the Facility that were not submitted to EPA.
3. Documentation pertaining to the submission of substantial risk data associated with the chemical substances that were manufactured, imported, processed or distributed by the facility.

H. Corporate Policies and Procedures

1. Facility and/or corporate policies developed to ensure compliance with TSCA Sections 4, 5, 8, 12 and 13.

I. List #1:

For chemical substances that were manufactured by the Facility in 2015, 2018 and 2019 include the following:

1. Accepted chemical name(s);
2. CASRN or the EPA accession number;
3. Production date;
4. Volume produced (a) annually if by continuous process, or (b) per batch and batch number identification number used to track each batch;
5. Include the percentage of each chemical component if applicable; and
6. Indicate if the chemical is a byproduct, is an impurity, or is an intermediate. If you identify a chemical as a byproduct or an intermediate, indicate in the process diagrams (See above **B- Process flow diagrams)** how it is produced.

For chemical substances imported from a foreign country in 2015 and 2018, include the following:

1. Accepted chemical name(s);
2. CASRN or the EPA accession number;
3. Percentage of each chemical substance in the mixture;
4. Import date;
5. Quantity imported per shipment;
6. Identification number used to track each shipment;
7. Safety Data Sheet for each chemical substance/mixture imported; and
8. The name of the supplier and the country.

J. List #2

For chemical substances and mixtures purchased from domestic suppliers (U. S. distributors) and used at the Facility in manufacturing or processing activities between January 1, 2018, and June 30, 2019, include the following information for each chemical substance/mixture:

1. Accepted chemical name(s) of each component;
2. CASRN or the EPA accession number;
3. Supplier name and location (address); and
4. If a CASRN is proprietary, provide a Safety Data Sheet from the supplier.

K. List #3

For chemical substances and mixtures exported from the United States by the Facility during the period covering January 1, 2017, through June 30, 2019, include the following:

1. Accepted chemical name of each component;
2. CASRN or the EPA accession number of each component;

3. The percentage of each component;
4. Note if the chemical substance is a byproduct, impurity or non-isolated;
5. Export date;
6. The destination country; and
7. A copy of any export notification(s) required under TSCA 12(b).

L. List #4

For R&D chemicals manufactured or imported at the Facility during the past three years, include the:

1. Names and addresses of those who received the R&D chemical;
2. Amount distributed per shipment to each addressee; and
3. Make available a copy of the safety data sheet, shipping label and any written notice provided to the customers for each R&D chemical.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 1 2019

UNITED PARCEL SERVICE

Jamie Banks
EHS Manager
3M Decatur
1400 State Docks Road
Decatur, Alabama 35601

Dear Mr. Banks:

On June 24-26, the Environmental Protection Agency Region 4 conducted a multimedia inspection of 3M Decatur located in Decatur, Alabama. We have enclosed the draft inspection report generated by the Region 4 Air Enforcement Branch for this inspection (Enclosure A) and would like to offer you the opportunity to review the report for any information that 3M Decatur would consider to be confidential business information, pursuant to the EPA's rules at 40 C.F.R. Part 2. See Enclosure B for confidential business information assertion and substantiation requirements. Please note that if the EPA receives a Freedom of Information Act request for the information you claim to be confidential or wants to determine whether such information is entitled confidential treatment, you will be required to bear the burden of substantiating your confidential claim. See 40 CFR §2.204(a) and (d).

Please respond within seven (7) days of receipt of this letter and indicate whether or not the company wishes to claim any part of the report as confidential. Provide the appropriate detail needed to discern what specific information is the subject of any claim to the address below:

Air Enforcement Branch
U.S. Environmental Protection Agency Region 4
61 Forsyth Street SW
Atlanta, GA 30303
Attn: Steve Rieck (AEB)

If you have any questions, you can contact me at (404) 562-9177, or by email at rieck.stephen@epa.gov.

Sincerely,

Steve Rieck
Environmental Scientist
Air Enforcement Branch

Enclosures (2)

cc: Michelle Howell, 3M Decatur

ENCLOSURE A
DRAFT INSPECTION REPORT
MAY CONTAIN CONFIDENTIAL BUSINESS INFORMATION

United States Environmental Protection (EPA) Agency Region 4
Air Enforcement Branch
Draft Inspection Report

I. GENERAL INFORMATION

Facility Name: 3M Decatur

Location (Address): 1400 State Docks Road, Decatur, Alabama

Inspection Date: June 24-26, 2019

Type of Inspection:
Multimedia Inspection

ICIS-Air Number: AL0110300009-2019

EPA Investigator(s)/Inspector(s) (Air inspection team):

1. Steve Rieck, Environmental Scientist
2. Mario Zuniga, Environmental Engineer

State/Local Investigator(s)/Inspector(s):

1. James Adams, ADEM

Person(s) Contacted at Facility (Name and Title):

1. Jamie Banks, EHS Manager
2. Michelle Howell, Decatur Site Manager
3. Stacee Bland, Environmental Engineer
4. Andrew Willing, Environmental Specialist;

Report Prepared by: Steve Rieck

II. FACILITY INFORMATION

A. Facility and Permit Information

Facility and Permit Information	Comments
1. Type of facility (e.g., chemical plant, refinery, cement manufacturer, etc.).	Plastic materials manufacturing
2. Air permit number(s) and type of permit (e.g., Title V, PSD, Synthetic Minor, etc.).	Air Permit #712-0009
3. Air permit issuance date.	March 10, 2015
4. Air permit expiration date.	March 9, 2020
5. Facility classification (Major, Synthetic Minor/Conditional Major, Minor).	Major
6. Major source pollutants (if applicable).	The facility is a major source for Hazardous Air Pollutants.
7. Applicable regulations (e.g., State Implementation Plan, MACT Subpart FFFF, NSPS Subpart EEEE, etc.).	The air inspection team focused on processes associated with the Building 3 and 4 reactor systems and process vents. This system is subject to 40 CFR Part 63, Subpart FFFF.
8. Types of air emission points (e.g., tanks, process vents, boilers, etc.).	Process vents connected to air pollution controls.
9. Types of air pollution control equipment (e.g., baghouse, scrubber, afterburner, etc.).	Carbon bed adsorption with Fourier Transform Infrared (FTIR) spectroscopy.

B. Process Description (provide narrative or attach description provided by the company or excerpts from the permit)

The 3M Decatur facility was constructed in 1961 and employs about 950 people. 3M operates a film manufacturing plant and a materials manufacturing plant. The materials plant consists of batch chemical production, fine chemical production, and adhesives production. The facility makes intermediate products which are sent or sold to other sites to manufacture and package the final products. The facility has recently requested permitting to install carbon bed adsorption on their 340 process and their 470/471 process, both processes at the materials plant.

EPA Region 4 inspectors conducted an announced, multimedia inspection of the facility. The air portion of the inspection focused on the 340 and 470/471 processes and controls and is the subject of this report. At the time of the inspection, the 470/471 process was operating with installed carbon bed adsorption. The 340 process was not operating, as 3M was installing the carbon bed adsorption system.

III. INSPECTION ACTIVITIES

Activity	Yes No N/A	Comments
Opening Meeting		
1. Date and time entered the facility.	Y	EPA Region 4 inspectors arrived at the facility at 12:47 CST on June 24, 2019.
2. Credentials presented to facility personnel (include name and title).	Y	Credentials were presented to Mr. Banks.
3. Conducted an opening meeting to explain the purpose and objectives of the inspection.	Y	EPA inspectors discussed objectives of the multimedia inspection. 3M provided a process and regulatory overview.
4. Discussed safety issues.	Y	EPA inspectors watched a video and discussed site-specific safety issues.
5. Discussed which records to be reviewed.	Y	EPA inspectors requested and reviewed records associated with 3M's regulatory requirements.
6. Discussed the facility walk-through and the areas to be observed in the facility.	Y	EPA air inspectors focused on the 340 and 470/471 processes and controls. Mr. Zuniga of the inspection team also looked at the facility's boilers and associated permit requirements.
7. Discussed facility policy regarding photographs or video (if applicable).	Y	Inspectors discussed facility policy regarding videos and photographs.

Activity	Yes No N/A	Comments
8. Discussed the use of the infrared camera, TVA, PID, and any other equipment.	Y	Inspectors discussed the use of the GF306 Optical Gas Imaging (OGI) camera. 3M indicated that they also had OGI cameras and would use them alongside the inspection team. The cameras are not intrinsically safe devices, preventing their use in process areas, as it would require process shutdown.
9. Discussed CBI.	Y	EPA inspectors informed the facility that they could claim CBI on information considered to be confidential, and that EPA would treat those documents in accordance with the regulations.
Records Reviewed at the Facility		
10. The types of records reviewed and the time period reviewed.	Y	EPA inspectors reviewed compliance files at the facility including: • Process flow diagrams • FTIR monitoring records • Permit applications • Boiler records

Activity	Yes No N/A	Comments
Facility Walk-Through Observations		
11. The process equipment observed and the associated operational rate observed. Provide the date and time the information was recorded by the inspector. Identify the permit limit (if applicable). An attachment may be used for a large amount of information.	Y	The air inspection team began with a walk-through the 340 process, located in building 3. At the time of inspection, the facility was installing carbon bed adsorption. The 340 process has not been operating since March 2019. The 340 process manufactures an intermediate surfactant product. It is a batch process and can take about one month per batch. The material produced is stored in totes or bins and used in the 470/471 process. The 470/471 process is located in building 4 and was operating during the inspection. The 470/471 process receives material from the 340 process. The material is mixed to create a final surfactant product tailored to required specifications. This product is sent to a separate facility where it is used to manufacture the final product. The air inspection team also observed operations at the #5 boiler house.

Activity	Yes No N/A	Comments
12. The type of process parametric monitoring observed and the associated value observed Provide the date and time the information was recorded by the inspector. Identify the permit limit (if applicable). An attachment may be used for a large amount of information.	N/A	
13. If process equipment or parametric monitoring equipment was not operating, state the reason by facility personnel why the equipment was not operating.	N/A	The 340 process was not operating while 3M installed carbon bed adsorption.
14. The type of air pollution control equipment, the process equipment it is controlling, and the associated parametric monitoring value observed (e.g., baghouse pressure drop, temperature, scrubber flow rate, etc.). Provide the date and time the information was recorded by the inspector. Identify the permit limit (if applicable). An attachment may be used for a large amount of information.	Y	The 340 and 470/471 processes are controlled by carbon bed adsorption. Waste streams from the processes are routed through a primary and secondary carbon bed. The controls are monitored with FTIR spectroscopy (See Item 15). After the carbon beds, the waste streams are routed to process vents. 3M routes any streams that may contain solvents to the building roof level before venting.

Activity	Yes No N/A	Comments
15. Continuous emissions monitoring devices and values observed. (e.g., CEMS, COMs, etc.). Provide the date and time the information was recorded by the inspector. Identify the permit limit (if applicable). An attachment may be used for a large amount of information.	Y	FTIR spectroscopy continuously analyzes and quantifies fluorochemicals after the primary and secondary carbon beds. The FTIR is operated using EPA Method 320 - Vapor Phase Organic and Inorganic Emissions by Extractive FTIR. Fluorochemicals in the waste stream do not have a regulated limit. 3M has set an action level at 0.6 ppm (specific for process 470/471), which is approximately the FTIR Level of Quantitation (LoQ). The LoQ is defined as 3 times the minimum detection level, consistent with EPA Methods. At the time of inspection, the facility had been running the 470/471 process for approximately an hour. FTIR did not indicate any concentrations exceeding the LoQ.
16. If air pollution control equipment was not operating, state the reason by facility personnel why the equipment was not operating.	N/A	
17. Capture and collection system (enclosures and hoods) observations, if applicable (e.g., the magnitude and duration of emission escaping capture from the hood).	N/A	

Activity	Yes No N/A	Comments
18. Ductwork transferring the emissions to the air pollution control device observations, if applicable (e.g., the magnitude and duration of emission escaping from the ductwork, holes or deterioration in ductwork, no deterioration observed, etc.).	Y	No issues were observed with control equipment duct work.
19. Any existing unpermitted emission points, new unpermitted emission points, or non-permitted construction activities observed. (if yes, describe in the comments field).	N	
20. Were any visible emissions observed? (if yes, identify the location and equipment).	N	No visible emissions were observed.
21. Was a Method 9 reading performed? (if yes, identify the location and equipment).	N	
22. Was the cause of the visible emissions investigated and the information documented?	N/A	
23. Was a Method 22 performed for visible emissions? (if yes, identify the location and equipment).	N	

Activity	Yes No N/A	Comments
24. Identify the cause of the visible emissions as explained by facility personnel, if applicable.	N/A	
25. Was the infrared camera used? If so, attach the video log (which includes the equipment ID, and the date and time the video was recorded) and videos to this report.	Y	The air inspection team used the GF306 FLIR camera to observe the 470/471 process vents. Simultaneously, 3M used a GF304 and a GF320 FLIR camera on the same vents. Each camera model has a filter for specific bands of absorbance wavelengths, allowing visualization of different materials. No emissions were observed from the process vents with any of the cameras.
26. Was the TVA used? If so, identify the equipment monitored and the results. Provide the date and time the information was recorded by the inspector. Include actual instrument readings for each piece of equipment monitored above the leak definition and/or where the infrared camera identified a release.	N	
27. Was the PID used? If so, identify how the PID was used and the results. Provide the date and time the information was recorded by the inspector.	N	

Activity	Yes No N/A	Comments
Closing Meeting		
28. Conducted a closing meeting.	Y	The air inspection team held a close out meeting at 2:10 PM CST on June 25, 2019.
29. Summarize any additional information needed, if applicable?	N/A	
30. Accept a declaration of CBI, if applicable?	Y	The air inspection team did not take any material declared CBI.
31. Discussed observations.	Y	The air inspection team thanked 3M staff for their time and assistance. The inspection focused on the 340 and 470/471 processes, as well as associated control and monitoring equipment. The team also reviewed and discussed permitting requirements for the facility boilers.
32. Discussed next steps, if applicable?	Y	The air inspection team will provide 3M a draft inspection report for review and a final report within 70 days of the inspection.
33. Date and time inspection concluded.		On June 25, at 2:30 PM CST the inspection concluded.
Miscellaneous		
34. Include any additional observations, if applicable.	N/A	

EPA Investigator/Inspector Signature: ______________________

EPA Supervisor Signature & Title ______________________

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Date Report Finalized: ______________________

ENCLOSURE B

Confidential Business Information (CBI)
Assertion and Substantiation Requirements

A. Assertion Requirements

You may assert a business confidentiality claim covering part or all of the report. If you assert no business confidentiality claim, EPA may make the information available to the public without further notice. To make a confidentiality claim, indicate that you are making a claim of confidentiality on a specific video. Any videos over which you make a claim of confidentiality should be marked by placing on or attaching to the information, at the time it is submitted to EPA, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as "trade secret" or "proprietary" or "business confidential" and a date if any when the information should no longer be treated as confidential. **You must be specific when identifying the information subject to your claim.** Information covered by such a claim will be disclosed by the EPA only to the extent permitted and by means of the procedures set forth by Section 114(c) of the Clean Air Act (the Act), and 40 C.F.R. Part 2, Subpart B. The EPA will construe the failure to furnish a confidentiality claim with your response to the attached letter as a waiver of that claim, and the information may be made available to the public without further notice to you.

B. Substantiation Requirements

All confidentiality claims are subject to EPA verification and must be made in accordance with 40 C.F.R. Part 2, Subpart B. You bear the burden of substantiating your confidentiality claim and must satisfactorily show that disclosure of the information would be likely to cause substantial harm to your business' competitive position; that you have taken reasonable measures to protect the confidentiality of the information and that you intend to continue to do so; and that the information is not and has not been reasonably obtainable by legitimate means without your consent, among other things. Conclusory allegations will be given little or no weight.

Before EPA makes a final determination regarding your claim of confidentiality, pursuant to 40 C.F.R. Part 2, Subpart B, EPA will send you a letter asking you to substantiate fully your CBI claim by answering 11 questions. Your comments in response to these questions will be used by the EPA to determine whether the information has been shown to meet the requirements so as to be entitled to confidential treatment. You must provide EPA with a response within the number of days set forth in the EPA request letter. Failure to submit your comments within that time will be regarded as a waiver of your confidentiality claim or claims, and EPA may release the information.

EPA will ask you to specify which portions of the information you consider confidential. You must be specific when identifying the information subject to your claim. Please note that if a document claimed by you to be confidential contains a significant amount of information which the EPA determines is not confidential, your confidentiality claim regarding that document, may be denied. Any information not specifically identified as subject to a confidentiality claim may be disclosed without further notice to you. For each item or class of information that you identify as being confidential, EPA will ask you to answer the following questions, giving as much detail as possible, as conclusory allegations will be given little or no weight in EPA's determination:

1. For what period of time do you request that the information be maintained as confidential, e.g., until a certain date, until the occurrence of a specified event, or permanently? If the occurrence of a specific event will eliminate the need for confidentiality, please specify that event.

2. Information submitted to the EPA becomes stale over time. Why should the information you claim as confidential be protected for the time period specified in your answer to question #1?

3. What measures have you taken to protect the information claimed as confidential? Have you disclosed the information to anyone other than a governmental body or someone who is bound by an agreement not to disclose the information further? If so, why should the information be considered confidential?

4. Is the information contained in any publicly available material such as the Internet, publicly available databases, promotional publications, annual reports, or articles? If so, specify which.

5. Is there any means by which a member of the public could obtain access to the information? Is the information of a kind that you would customarily not release to the public?

6. Has any governmental body made a determination as to the confidentiality of the information? If so, please attach a copy of the determination.

7. For each item or category of information claimed as confidential, <u>explain with specificity</u> why release of the information is likely to cause substantial harm to your competitive position. Explain the specific nature of those harmful effects, why they should be viewed as substantial, and the causal relationship between disclosure and such harmful effects. How could your competitors make use of this information to your detriment?

8. Do you assert that the information is submitted on a voluntary or a mandatory basis? Please explain the reason for your assertion. If you assert that the information is voluntarily submitted information, please explain whether the information is the kind that would customarily not be released to the public.

9. Whether you assert the information as voluntary or involuntary, please address why disclosure of the information would tend to lessen the availability to the EPA of similar information in the future.

10. If you believe any information to be (<u>a</u>) trade secret (<u>s</u>), please so state and explain the reason for your belief. Please attach copies of those pages containing such information with brackets around the text that you claim to be (<u>a</u>) trade secret (<u>s</u>).

11. Explain any other issue you deem relevant (including, if pertinent, reasons why you believe that the information you claim to be CBI is not emission data or effluent data).

Please note that emission data provided under Section 114 of the Act, 42 U.S.C. § 7414, is not entitled to confidential treatment under 40 C.F.R. Part 2. "Emission data" means, with reference to any source of emission of any substance into the air - (A) information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of any emission which has been emitted by the source (or of any pollutant resulting from any emission by the source), or any combination of the foregoing; (B) information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of the emissions which, under an applicable standard or limitation, the source was authorized to emit (including, to the extent necessary for such purposes, a description of the manner and rate of operation of the source); and (C) a general description of the location and/or nature of the source to the extent necessary to identify the source and to distinguish it from other sources (including, to the extent necessary for such purposes, a description of the device, installation, or operation constituting the source). 40 C.F.R. §§ 2.301(a)(2)(i)(A), (B) and (C).

Information designated confidential will be disclosed by EPA only to the extent allowed by, and by means of the procedures set forth in, 40 C.F.R. Part 2, Subpart B. If you fail to claim the information as confidential, it may be made available to the public without further notice to you.